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EDITORIAL



SILVER ANNIVERSARY CONVENTION

Once again it is Federal Convention time, and the 25th Federal Convention will be held over the Easter week-end from March 27 to 30. The coming weeks will see the culmination of two years of effort since the last Convention in preparations for the Extraordinary Meeting of the Radio Conference of the International Telecommunication Union.

It is more than 25 years since the first Federal Convention was held and it is certain that our early delegates and the Federal Headquarters of that time would agree that the coming meeting was the most important of those held during the long history of the Institute. The issues that are at stake are big and the future of the Institute and Amateur Radio in general may well depend on the deliberations at the Convention.

Although there will no doubt be matters of a general and domestic nature to be discussed also, the main work of the Twenty-fifth Federal Convention will be to prepare the brief for our delegate and to detail the policy to be adopted on various matters which are likely to be argued by delegates from all countries participating in the discussions at Geneva. Liaison has already been taking place between the Institute and the other major radio societies of the world so that a common pol-

icy for the Amateur Service may be achieved.

It is this liaison and that which will take place at Geneva itself between Amateur delegates that made it imperative to have our own delegate in attendance, and the reason for the Federal Executive's campaign for funds to finance the venture. Our finances are now such that we are confident of our delegate going to the Conference, but we must still reach our target to help to make his stay in Geneva comparable with other representatives who will be present for the complete duration of the Conference.

It is to be hoped that all Divisions knowing the importance of the coming Convention will brief their delegates accordingly and give them such powers as necessary to make decisions "on the spot", and to present in the main only those matters that are significantly policy and regulatory ones.

Our official delegate to the I.T.U. Conference will be present at the Convention, and it is our duty at this "Silver Anniversary" of Federal Conventions, by the unanimity of discussions and singleness of policy, to give him our brief for Australian Amateurs in general and our confidence in particular. Help us to help you make this a momentous occasion for the Wireless Institute of Australia.

FEDERAL EXECUTIVE

THE CONTENTS

A.C. Power Supply for the No. 22 Set	3	Russian Phone Contest	13
Prediction Chart, March 1959	5	U.S.S.R. Diploma "W-100-U"	13
A Noise Limiter for Mobile Work	5	W.I.A. Victorian Division's New Premises	14
A Simultaneous R.F. Bridge Indicator	5	Amateur Call Signs	16
Brief Details of Surplus Radio Equipment	7	Book Review: "Race for Life"	17
The Versatile Standing-Wave Ratio Indicator	9	DX	18
Meet the Other Amateur and His Station: Alan Brown, VK3CX	13	VHF	21
		Correspondence	23
		Notes	24
		Contest Calendar	24

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A.C. Power Supply for the No. 22 Set

C. S. RANN,* VK3AAK

AS No. 22 and No. 122 sets are being released from disposal sources and are appearing in the Amateur bands in increasing numbers, it was thought that a description of an a.c. power supply for these units may be of interest.

The units are designed for use with a 12v. accumulator, and the construction of an a.c. power supply to run the unit is complicated by the two following difficulties: (1) There are 'battery tubes in the unit which require a low d.c. filament supply; (2) The battery power supply that goes with the unit contains vital parts of the circuit, such as switching relays, therefore it is difficult to do without this unit.

On considering these two difficulties, it was decided to construct a 12v. d.c. power supply, to replace the 12v. accumulator, rather than to try and replace the d.c. power supply of the unit with a normal mains power supply. Another attraction of constructing the 12v. power supply was that it could be used as a battery charger—an item that has long been required at this QTH.

Once having decided in principle that a smoothed-out battery charger was the most convenient means of powering the rig, a little reflection on the currents involved showed that it was not going to be easy to obtain adequate voltage regulation between transmit and receive. The most likely solution is probably to float an old accumulator between the battery charger and the unit, however I did not want an accumulator in the house so I set about trying to design a power supply that would stay at 12v. when the load varied from approx. 2-6 amps, i.e. 300%. This is such a large variation that the task appeared impossible. Indeed it did prove so using several conventional methods of improving regulation.

In these tests a bridge rectifier (STC B112-1-C) was used to give full wave rectification and a heavy choke from an old-time movie projector (d.c. source for the sound lamp) with two 5,000 μ F. smoothing condensers was available to smooth out the supply. The main item of the unit was a variable gap battery charger transformer supplying voltage from 3-40 volts at up to 10 amps, and was very attractive from the battery charger angle. Unfortunately, it is believed that these are no longer available. However, multi-taps on a high current transformer could be substituted providing a reasonably close control of voltage can be obtained.

With this basic equipment, a normally smoothed circuit was tried and the regulation was so bad that there was a voltage drop of over 5 volts between receive and transmit. Re-arranging components and introducing more inductance or capacitance all gave much the same result, with no apparent hope of a satisfactory solution by this means.

Next a battery regulator from an I.F.F. unit was tried. In this unit the load is taken through a carbon pile, the resistance of which can be changed by

MODIFICATIONS TO THE NO. 22 OR 122 SETS

As this magazine is desirous of publishing details of any alterations to improve these sets, members can assist other Amateurs by forwarding details of their work for inclusion in a series of articles on the modifications to these sets.
—Editor.

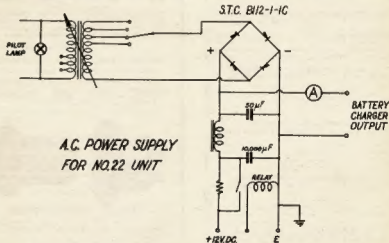
a solenoid compressing the tablets of the pile. The current through the solenoid can then be adjusted in direction and magnitude to give the desired regulation.

Connections in series, parallel and combinations of both were tried with the solenoid coil, carbon pile and power supply. A variable resistor was connected in series with the solenoid to vary the current in these tests. Of all the tests tried no combination gave a satisfactory result although better regulation was obtained than without the pile. If a pile designed for 12v. use

activating the shorting relay. I finally decided to use relay RL2 contacts 1 and 2 in the power supply. Contacts 1 and 2 switch the 12v. input from the battery into the second vibrator unit when the unit goes over to transmit. By taking a lead out from contact 1 on RL2, 12 volts is supplied to the shorting relay whenever the unit goes to transmit. This voltage is brought out through the power plug which is a four-pin connector. In the original wiring two pins are wired in parallel, one of these pins was disconnected for carrying the voltage back to the shorting relay. Using this system does not upset the No. 22 wiring, and the unit can still be used in the conventional way with an accumulator.

The series resistor used was obtained from the junk box. It has two ohms resistance and can take up to 20 amps. It was made variable with a slider and adjusted to give perfect regulation in practice. The shorting relay was an ordinary 12v. disposals relay also from the junk box.

For battery charging use, a separate output with a meter is taken from the



A.C. POWER SUPPLY
FOR NO. 22 UNIT

could have been obtained the result may have been different.

After further thought on the problem it became apparent that continuous voltage regulation was not really required, but regulation at two specific loads was actually the requirement. Once this was fully appreciated the solution became apparent. A resistor could be put in series with the load; this resistor could then be shorted out with a relay on transmit. This idea was successful on the first try. The only difficulty was to short out the resistor automatically when the unit went over to transmit.

As the No. 22 has a large number of relays built in, and as they are all very busy stopping one way or the other on transmit, I decided to look around for one that could provide 12v. d.c. for

output of the rectifier before the main smoothing unit. An external switch (T.U. unit switch) is also provided to select different taps of the battery charging transformer, also the variable gap control of the transformer has been brought out to the front panel. As a battery charger the unit is very versatile and can charge at up to at least 10 amps.

The unit described above has been working perfectly on the air for many months. It has also been working as a battery charger over the same period, and on no occasion has it given any trouble. There may be other ways of putting the No. 22 on the air with an a.c. supply, and if so, I hope they will be described. However, this method certainly works well and can be recommended for reliability.

* 2 Georgiana St., Sandringham, Vic.

PREDICTION CHART, MAR. '59

Me. E. AUSTRALIA — W. EUROPE S.E. Me.	0 2 4 6 8 10 12 14 16 18 20 22 24	Me.
GMT		
45	28	45
31	14	31
14	7	14
E. AUSTRALIA — W. EUROPE L.E.	0 2 4 6 8 10 12 14 16 18 20 22 24	E.
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E. AUSTRALIA — MEDITERRANEAN	0 2 4 6 8 10 12 14 16 18 20 22 24	E.
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E. AUSTRALIA — N.W. U.S.A.	0 2 4 6 8 10 12 14 16 18 20 22 24	E.
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E. AUSTRALIA — S. AFRICA	0 2 4 6 8 10 12 14 16 18 20 22 24	E.
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E. AUSTRALIA — FAR EAST	0 2 4 6 8 10 12 14 16 18 20 22 24	E.
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W. AUSTRALIA — W. EUROPE	0 2 4 6 8 10 12 14 16 18 20 22 24	W.
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- Continuous frequency coverage from 1.7 Mc. to 230 Mc.
- Operates on 110/230v. a.c., 40 to 60 cycle mains.

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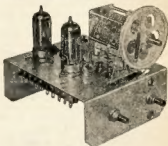
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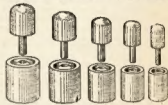
MODEL 4/104:

New six-band v.f.o. including the 11 mx band. Covers 80, 40, 20, 15, 11 and 10 mx. Uses 6CL6 osc. driving 5763 amp.; sufficient drive for 807 or 6146 p.a. stage.

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	1/8"	1/4"	3/8"	1/2"	5/8"
3/8"	21/-	1-3/16"	35/-		
1/2"	22/6	1-1/4"	42/6		
5/8"	22/6	1-3/8"	47/6		
1 1/8"	23/6	1-1/2"	47/6		
3/4"	24/6	1-3/4"	57/6		
1"	31/8	2"	62/6		
1-1/8"	33/8	2"	67/6		

Any special size requirements made to order

Q-MAX SCREW-TYPE CHASSIS CUTTERS

	1/8"	1/4"	3/8"	1/2"	5/8"
5/8"	26/7	1-3/8"	38/6		
3/4"	26/7	1-1/2"	38/6		
7/8"	28/4	1-3/4"	42/-		
1"	34/10	2-3/32"	68/9		
1-1/8"	34/10	2-1/2"	81/7		
1-1/4"	34/10	1" Square	52/9		

One key supplied with each cutter. Spare keys 1/8 each.

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BEZELS

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Available in—

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- Green
- Blue
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- Clear



A Noise Limiter for Mobile Work

LES JENKINS,* VK3ZCN

VERY few mobile operators have not suffered at some time the problems of Ignition QRM. This would be by far the greatest problem which faces the designer of mobile receiving equipment, whether for v.h.f. or the lower bands.

Most of the better known systems of noise limiting give, at best, a poor performance and usually introduce more than a tolerable amount of distortion.

When a new mobile rig was built recently for use on the two metre band, it was decided to try and overcome this problem once and for all. The results were so much an improvement that it was decided to put pen to paper and share this one with all interested parties.

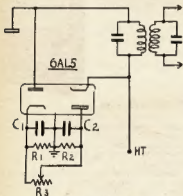


Fig. 1.—Mobile Noise Limiter.

C1, C2—0.1 μ F.
R1, R2—0.5 megohm.
R3—1 megohm.

The circuit is very simple and, if room is available in the rig, its inclusion is recommended to those troubled by ignition noise, both from their own or passing cars.

The principle of operation is quite novel, and a few words on that subject seem in order. Referring to the circuit (Fig. 1), the dual diode is connected across the primary of the last i.f. transformer. When a signal is impressed across this tuned circuit, the capacitors C1 and C2 will charge, and if we neglect voltage drop across the tube resistance, the charge will equal the signal voltage. This will bias the diodes off, so if no discharge path (R1, R2, R3) was present, no further conduction would take place. Due to the presence of these resistors, the charge on the capacitors follows normal amplitude changes.

When impulse noise is present, the tuned circuits in the receiver tend to "ring", producing high amplitude wave-trains at the i.f. This effect is overcome in the limiter, as the diodes will conduct heavily if the instantaneous value of voltage applied to the diodes is in excess of the bias level (EC1—EC2). This heavy current damps the ring, at

the same time lowering the Q of the tuned circuit, reducing the response of the receiver for the duration of the pulse. This effect is assisted if the core of the transformer tends to saturate at the same time, lowering the transfer of energy from primary to secondary for the pulse duration.

To be effective in the elimination of a succession of pulses, the capacitors must be able to discharge toward the average bias level in time to operate on the following pulse. This is taken care of by the control R3, which provides a variable time constant for the discharge path. This control is best located in an accessible position for the operator, and is varied to achieve best suppression. It has been found in practice that this position in no way alters the normal receiver performance. No noticeable distortion is introduced on normal signals, but some overloading occurs on extremely strong ones. Under such conditions, the control is used at its maximum resistance position. It will also be found that normal thermal noise can be suppressed under weak signal conditions, although in this respect the limiter is not as effective as more conventional types. On ignition noise, however, its effectiveness is akin to magic!

As an example, a recent contact from Ballarat to VK3AGV at Colac was carried out whilst mobile. Although Gordon's signal varied from S3 to S7, no difficulty was experienced in copy. At no time was any trace of ignition noise present. Prior to this limiter being fitted, a conventional one was used and signals below S5 were impossible to copy.

The use of this limiter is recommended to v.h.f. operators who are troubled by auto QRM at the home QTH. There is no reduction of receiver sensitivity in any way, so it offers a solution to the age-old problem of the city bound v.h.f. enthusiast, particularly on six metres.

The receiver to which this limiter was fitted is a well known commercial car radio, which is fed from a crystal locked 2 metre receiver. The antenna is a "halo" mounted on the sun visor with co-ax feed. This circuit solved the problem, when the only solution seemed to be to buy a diesel!

So good mobile DX, chaps!

NEW ADDRESS FOR MAIL TO "AMATEUR RADIO"

All manuscripts, notes and correspondence to "Amateur Radio" should be forwarded to:—

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VICTORIA.

A SIMULTANEOUS R.F. BRIDGE INDICATOR*

BOB FORMAN, W9RJB

The writer was given a dual scale aircraft oil temperature gauge by a generous friend (W9LIT) some time ago and, like any red-blooded Ham, refused to throw it away.

Months later, in search of a lower standing wave ratio, a Micro-Match coupler was purchased with the idea of using it with an existing multi-meter, as an indicator. After changing the test leads back and forth a few times, the light came on and the dual scale meter was carefully removed from the junk box.

After removal of unnecessary parts, the movements were connected to a two contact mike jack on the rear and the coupler unit was fitted with a mating connector.

Since the interest here is in low power, it was unnecessary to add a scale multiplying arrangement of any kind. Above this figure it will be necessary to provide attenuation for higher power readings.

A new scale was constructed and calibrated in the standard unit of Amateur power measurement, the Cob. Since the meter originally contained quite a number of correcting chokes, presumably made up to match the sensing elements in the original installation, it was found that the meter movements were neither linear nor logarithmic, so no attempt was made to calibrate the scale accurately.

The indicating needles were originally painted with luminous paint. In the conversion, the pointer indicating reflected power was painted red and the other black. Every fifth line was inscribed in red to aid in counting and to avoid the necessity of numbering or worry about figure placement, on the small scale. Photo fans could, of course, have a field day in scale design with such a unit.

The convenience of being able to read both powers at the same time repays the efforts of construction many times over.

[There are many similar meters going cheaply to disposals and twin 100 μ A. direction indicators should be ideal.

—Editor "A.R."]

* Reprinted from "CQ", Dec. 1959.

W.I.A. SOUTH WEST. ZONE CONVENTION

will be held at
GEELONG
on

11th and 12th APRIL, 1959

A welcome is extended to all those interested to attend. Activity mainly will be centred on 3.5 and 7 mc. and v.h.f. Hotel and dinner bookings must be made not later than one week prior to Convention—10/- deposit for hotel booking.

Further information is available from Geelong Amateur Radio Club members and Sunday morning VK3WI Broadcast.

THE WARBURTON FRANKI

PAGE

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TOP PERFORMANCE SPEAKERS

MAGNAVOX STANDARD RANGE SPEAKERS

	MODEL	12P1	12P2	10P1	10P2	8P1
Overall Diameter	12½"	12½"	10½"	10½"	8-3/16"	8"
Baffle Opening	11"	11"	8½"	8½"	7½"	7"
Voice Coil Diameter	1"	1"	1"	1"	1"	1"
Voice Coil Impedance ohms at 400 c.p.s.	2.7	2.7	2.7	2.7	2.7	2.7
Cone Resonance Range c.p.s.	15-75	45-75	80	80	95-130	7
Power Handling Cap.—Watts	10	10	8	8	63/-	7
RETAIL PRICE	81/-	66/-	75/6	64/1	2/3	2/3
POST VIC.	2/11	2/11	2/11	2/11	3/8	3/8
INT.	4/4	4/4	4/4	4/4	3/8	3/8

	MODEL	8P2	6P1	6P2	525
Overall Diameter	8-3/16"	6½"	6½"	5½"	5½"
Baffle Opening	7½"	5-9/16"	5-9/16"	4-13/16"	4"
Voice Coil Diameter	1"	1"	1"	1"	1"
Voice Coil Impedance ohms at 400 c.p.s.	2.7	2.7	2.7	2.7	2.7
Cone Resonance Range c.p.s.	95-130	80-120	80-120	135	135
Power Handling Cap.—Watts	7	6	6	4	4
RETAIL PRICE	52/6	58/6	51/5	42/6	42/6
POST VIC.	2/3	1/10	1/10	1/10	1/10
INT.	3/8	3/-	3/-	3/-	3/-

MAGNAVOX WIDE-RANGE SPEAKERS

	MODEL	HF5	6WR	8WR	12WR
Overall Diameter	5½"	6½"	8-3/16"	12½"	12½"
Baffle Opening	4-13/16"	5-9/16"	7½"	11"	11"
Voice Coil Diameter	3"	1"	1"	1"	1"
Voice Coil Imped., ohms	2.7	2.7	2.7	2.7	2.7
Cone Resonance, c.p.s.	130	45	45	45	45
Frequency Range	130-10K	30-15K	30-15K	40-15K	40-15K
Power Hand. Cap., watts	4	6	7	10	10
RETAIL PRICE	55/11	£6/10/0	£6/0/0	£7/9/7	£7/9/7
POST VIC.	1/10	1/10	2/3	2/11	2/11
INT.	3/-	3/-	3/8	4/4	4/4

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"KEW" MODEL TK30-A

Size 4" x 2½" x 1½".

Model TK-30 is a midsize, individual jack-type circuit tester with a colored plastic panel and cabinet.

D.C. Volts: 15/150/750V. (1,000 ohms/V.)

A.C. Volts: 15/150/750V. (1,000 ohms/V.)

D.C. Current: 150 mA.

Resistance: 100K ohm (by 1.5v. internal bat.).

81/9 + 12½% Tax. Post Vic. 1/10, Int. 3/-.

"KEW" MODEL TK-50

Size 4½" x 3½" x 1½".

Model TK-50 is a pocket size individual jack-type circuit tester with an insulated panel and steel cabinet.

D.C. Volts: 10/250/500/1000 (1000 ohm/V.)

A.C. Volts: 10/250/500/1000 (1000 ohm/V.)

D.C. Current: 1/250 mA.

Resistance: 10/100K ohm (by 1.5v. int. bat.)

£6/7/9 + 12½% Tax.

Post: Vic. 1/10, Int. 3/-.



"KEW" MODEL TK-70

Size 5" x 3½" x 1½".

Model TK-70 is a pocket size rotary switch type circuit tester with an insulated panel and steel cabinet.

D.C. Volts: 10/50/250/500/1000V. (2000 ohm/V.)

A.C. Volts: 10/50/250/500/1000V. (2000 ohm/V.)

D.C. Current: 500 uA./25/500 mA.

Resistance: 10K ohm/1 megohm (by 3v. internal battery).

Decibels: —20 to +22db., and +20 to +36db.

£9/1/4 + 12½% Tax. Post: Vic. 1/10, Int. 3/-.

"KEW" MODEL TK-90

Size 6" x 4" x 2½".

Model TK-90 is a handy size rotary switch type circuit tester with a black bakelite panel and cabinet, having a high sensitivity 45 uA. meter 20,000 ohms per volt on D.C. and 8,000 ohms per volt on A.C.

D.C. Volts: 10/50/250/500/1000V.

A.C. Volts: 10/50/250/500/1000V.

D.C. Current: 50 uA./2.5/25/250 mA.

Resistance: 5/50/500K ohm/5Megohm (by 3v. internal battery).

Decibels: —20 to +5db. (0db.—0.775V.

600 ohm) and +5 to +22db.

£11/4/0 + 12½% Tax.

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ADF—U.S. Navy Receiver. 15 to 1750 Kc. in six bands. Tubes: 6D6 (3), 76 (2), 6C6 (2), 41.

AM-26/21-0—Interphone Amplifier. Tubes: 12J5 (2), 12A6 (2). Designed for use from 28v. dynamotor.

APA10—Pan-oscillo. Receiver. 115v. a.c. operated and contains panoramic adaptor with i.f. of 405-505 Kc., 4.75 to 5.75 Mc. and 29-31 Mc.

APN-1—Altimeter. 416-462 Mc. Tx and Rx which measures 3 to 4000 ft. altitude. Size 18" x 9" x 7". Operates from 28v. d.c. and contains 12SH7 (4), 12SJ7 (3), 12H6 (2), VR150, 955 (2), 9004 (2).

APN-4—Radar Oscilloscope. 25 tubes measures 18" x 9" x 12", weighs 50 lb.

APQ-9—V-h.f. Radar.

AP8-15—Radar set, 45 tubes, 3 meters, 4 x 115v. 400 cycle supplies, multi-vibrators, 5" and 2" scopes.

APT-5—Tx 1500 Mc. uses 115v. a.c. filaments, no plate supply. Tubes: 8AC7 (2), 6L6, 829 (2), 931A, 522, 6AG7.

ARB—Navy Receiver, 195 Kc. to 9050 Kc. Tubes: 12SA7, 12SF7 (4), 12A6. Weighs 28 lbs. Two i.f. 935 or 135 Kc.

ARC-4—Tx and Rx using four xtal. channels in 140 Mc. range. 24 or 12v. d.c. Tx 7 tubes, Rx 13 tubes.

ARC-5—Navy aircraft equipment: Receivers: 190-550 Kc., 1.5-3.0 Mc., 3.0-6.0 Mc., 6.0-9.1 Mc. Transmitters: 500-800 Kc., 800-1300 Kc., 1.3-2.1 Mc., 3.0-4.0 Mc., 4.0-5.3 Mc., 5.3-7.0 Mc., 7.0-9.1 Mc., 100-156 Mc. Modulator MD-7/ARC5: two 1625 tubes.

ARC-429—Two-band Rx, 201-400 Kc. and 2500-4700 Kc.

ARC-429A—Two-band Rx, 201-400 Kc. and 4150-7700 Kc.

ART13/ATC—Collins Auto-tune Tx, 2.0-18.1 Mc. in 11 channels, 70 lbs. 150 watts r.t. or c.w. 813 final, p.p. 811 mod. V.f.o. and xtal. calibrator.

ASP—Radar equipment, 315 Mc.

ATD—C-w. or phone Tx. 540-9050 Kc. Requires 380v. and 1000v. a.c. R.f. osc. 6L6, p.a. 614. Speech amp. 6SL7, driver 6L6, mod. p.p. 6L6. 75 lbs. Size: 11" x 12" x 21".

AVT-112A—Tx, 2500-6500 Kc. phone. 6, 12, or 24v. d.c. Six tubes, 6 lbs.

B-19 Mark II—Tx-Rx, 80 and 40 mx.

BC191—Same as BC375E except operates from 12 or 24 volts.

BC221—Frequency Meter. Up to 125th harmonic. Basic frequency 125-250 Kc. and 2-4 Mc. Accuracy 0.005%.

BC22-82—Rx and Tx, 28-38 Mc. and 38-52 Mc.

BC233-AX—Medium Frequency Tx. 801 osc., 801 p.a., 46 (2) mod., 46 speech amp., 10 to 30 watts r.t., c.w. or m.c.w. 4 xtal. frequencies and v.f.o. on switch. 2000-5250 Kc.

BC24—Rx, 200-500 Kc. and 1500 to 18,000 Kc. 14v. d.c. dynamotor. Identical with BC348 except input volts.

BC306A—Antenna Tuning Unit for BC375 Tx. 150-800 Kc.

BC312—Rx, 1.5-18 Mc., 9 tubes, two r.f. stages. Tubes: 6K7 (4), 6L7, 6C5 (2), 6R7, 6F8.

BC314—Same as BC312 but covers 150-1500 Kc.

BC322—Tx-Rx, 52-65 Mc.

BC342—Same as BC312 but operates 115v. a.c.

BC344—Same as BC314 but operates 115v. a.c.

BC348—Rx, 200-500 Kc. and 1.5-18 Mc. Automatic noise compensator (neon), o.p. 300 or 4000 ohms, xtal. filter, a.v.c., m.v.c., b.f.o. 6K7 (2) r.f., 6C5 osc., 6J7 mixer, 6K7 1st i.f., 6F7 2nd i.f. and b.f.o., 6B8 3rd i.f. and 2nd det., 41 output. Operates from 28v. d.c.

BC357—Beacon Rec., superregen., 75 Mc.

BC375—Tx, 150 watts, 200-12,000 Kc. less 550-1500 Kc. 211 osc., 211 r.f. amp., 10 speech amp., 211 (2) p.p. modulators, 5 tuning units: TU5B 1.5-3.0 Mc., TU6B 3.0-4.5 Mc., TU7B 4.5-6.2 Mc., TUBB 6.2-7.7 Mc., TU10B 10.0-12.5 Mc.

BC403—Radar Oscilloscope, 5" tube. 115v. 60 cycle operation. Part of SCR270 and 271.

BC404—Radar Rx for SCR270 and 271, cover 102-110 Mc., 12 tubes. 115v. a.c. 60 cycles.

BC406—Rx from SCR268, covers 201-210 Mc. 15 tubes. 115v. a.c.

BC412—Oscilloscope from SCR268 Radar.

BC433—Compass Rx, 200-1500 Kc., 112 Kc. i.f.

BC450A—Control box for BC453, etc. Receivers.

BC453A—Rx. This unit is one of series of aircraft Receivers. Weight 6 lbs. Size 8" x 8" x 12". Requires 250v., 50 ma. h.t. and 25.2v. at 0.45a. for fil. All have 300 or 4000 ohms op. and are for r.t. or c.w. Tubes: 12SK7 (3), 12SR7, 12A6, 12K8. BC453A covers 190-550 Kc., BC454A 3-6 Mc., BC455A 6-9.1 Mc.

BC456A—Is Screen Modulator for the BC457A Tx.

BC457A Series Tx's. Designed for use with BC453A series Rx's, 30-40 watts. Tubes: 1625 (2) p.a., 1626 osc., 1629 magic eye. BC457A covers 1.0-5.3 Mc. xtal. check on 4800 Kc. with 1629 eye.

BC458A—Same as BC457A. Covers 5.3-7 Mc., xtal. check on 6.2 Mc.

BC459A—Same as BC457A. Covers 7.0-9.1 Mc. with xtal. check on 8.0 Mc.

BC603—Receiver. 10 channel f.m., uses push buttons or manual. 20-30 Mc. 10 tube superhet, b.f.o., 12 volt operation.

BC604—18 channel f.m. Tx, push button or v.f.o., 20-30 Mc. using 1625 final, 20 watts, 12v. operation, 8 tubes.

BC620A—Tx-Rx covering 20-27.9 Mc. xtal. controlled, f.m. 13 tubes: 1LH5 (4), 1299 (4), 6LC8, 1294, 1281 (2), 1LH4. Weighs 38 lbs.

BC624—Receiver section of SCR522.

BC625—I.F.F. Tx and Rx, 435-500 Mc. Weight 25 lbs. 400v. at 135 ma., plus 9v. at 1.2a. required. Tubes: 7F7 (4), 7H7 (4), 7E8 (2), 6F6 (2), 955, 316A.

BC653—Tx 100w. c.w., 22w. phone. 2.0 to 4.5 Mc. 814 (2) final, 807 buffer, 1813 mo. and mod.

BC654A—Tx and Rx, 3.8-5.8 Mc. 12 watts phone, 25 watts c.w. 7 tube Rx using 1N5 (3), 1A7, 3Q5 (2), 1H5. 6 tube Tx uses 307A (2) in final. Requires 1.5v., 45v. and 90v. for Rx, requires 1.5v., 6v., 84v., and 500v. for Tx. Uses PE103A dynamotor.

BC659—Tx-Rx, f.m. r.t. only. 27.0-38.9 Mc. Xtal. controlled, 2w., battery operation.

BC684-683—Tx and Rx f.m. 27-38.9 Mc. Rx 9 tubes, 10 channels, push buttons. 35w. Tx uses 8 tubes, 10 channels, push buttons.

BC696—Same as BC457A. Covers 3-4 Mc. xtal. check on 3500 Kc.

BC701—V-h.f. Rx 170-180 Mc. I.f. 30.5 Mc. 11 tubes.

BC704A—Radar Indicator. Part of the SCR521. Tubes: 5BP1, 6AC7 (4), 6H6 (3).

BC728—Push button Rx. 2 or 6v. 2-5 Mc. 6 tubes.

BC788—Rx, 420-450 Mc. Six i.f. stages using 6AG5s. 30 Mc. broad-width.

BC929—Radar Oscilloscope, 110v. 400 cycles.

BC939—Antenna Tuning Unit for the BC101 Tx.

BC946B—Same as BC453A. Covers 520-1500 Kc.

BC947A—U.h.f. Tx, 3,000 Mc. 115v. a.c. with blower.

BC966A—I.F.F. approx. 150 Mc., 14 tubes.

BC1023A—Marker Beacon Rx, 75 Mc., uses 6S07, 6U6G, 6SC7, 12SH7. 12 or 24v. d.c.

BC1068A—Rx. See BC1161A.

BC1072A—150-200 Mc. Tx. 11 tubes, 115v. a.c.

BC1181A—Rx used with BC1072A, 150 to 200 Mc., 115v. a.c. Component of RC150 I.F.F. Tubes: 6SN7, 6H6, 6SH7 (3), 6AC7 (3), 6AB7 (2), 9008, 6J5, 5U4, 6E5. Same as BC1068A.

BC1206C—Seitchell-Carlson Beacon Rx 195-420 Kc. Size: 4" x 4" x 6". Tubes 25L6 (2), 6SK7, 6SF7, 6L6, 6K7. 28v. d.c. is high and low tension.

BC1267—Tx and Rx, 154-186 Mc. 1 kw. pulse osc. Superhet Rx, 2 r.f. stages, 5 staggered i.f.s.

BD77-KM—Dynamotor, 14 volt input, 1000 volts output, for BC191.

C-1—Auto Pilot Amplifier for Radio Mod. etc. Tubes: 7F7 (3) amp., 7N7 (3) signal discriminators, 7L4 rectifier.

CCT46077—Tx, 2-20 Mc., 12v. operation. 30 lb. weight. Unit of RBM-2 equipment.

CR746151—Rx, 195-9050 Kc. See ARB.

DAG33A—Dynamotor. 18v. d.c. input, 450v. output at 60 ma.

DM21—Dynamotor, 14v. input, output 235v. at 80 ma.

DM33A—Dynamotor, 28v. input, 540v. at 250 ma. output. Power supply for BC457 Tx and Mod.

EES—Field Telephone.

GO-9—Tx, 200-18100 Kc., 150 watt, 803 final, v.f.o., 115v. 800 cycles.

* Wick Street, Deniliquin, N.S.W.

GF11.—Equipment consists of CW-52063A Tx, CW52014 Tx base, CW-23097 Tx base control box, CW23049 relay unit, CW47092 coil set.

GP-7.—Tx, 125 watts. 350-8050 Kc. Plug-in tuning units.

MN-26.—Compass Rx. Models "A" to "C" cover 150 to 1500 Kc. two r.f. stages, I.F. 110 Kc. Model "H" top limit 9 Mc.

PC-77.—Dynamotor, input 12v., output 175v. 100 mA., 500v. 50 mA.

PE73-CM.—Dynamotor, input 28v., output 1000v. for BC375.

PE85.—Dynamotor, 28v. input, 250v. 60 mA. output.

PE101C.—Dynamotor, 12 or 24v. input, output 800v. 20 mA., and 400v. 135 mA., plus 9v. a.c. i.l.a. for BC645.

PE103A.—Dynamotor, 6 or 12v. input, 500v. 160 mA. output.

PE104.—6 or 12v. input, 90v. 50 mA. output, dynamotor.

PE109.—D.C. power plant. Petrol engine and generator, has 32v. output at 2 kw.

PRS-1.—Mine detector.

R5/ARN-7.—Radio Compass Rx, 17 tubes. Range: 200-1750 Kc.

R65/APN-9.—Loran Indicator and Receiver, 35 tubes and 3" scope. 110v. 400 cycles supply.

R/89/ARN-5A.—Glide Path Rx. 11-tube superhet. 332-335 Mc. Tubes: 6AG5 (7), 12SR7, 12SN7 (2), 28D7.

R1155.—Rx, covers 75-200 Kc., 250-500 Kc., 600-1500 Kc., 3-7.5 Mc., 7.5-18 Mc. I.F. is 560 Kc. B.f.o. 280 Kc., 2nd harmonic used.

RA-1B24.—Bendix Rx, 150-315 Kc., 315-680 Kc., 680-1500 Kc., 1.5-3.7 Mc., 3.7-7.5 Mc., 7.5-15 Mc. 6.3v. i.l., 250v. h.t. Tubes: 6K7 (5), 6L7, 6R7, 6K6G.

RA-20.—115v. 60 cycle supply for the BC312 and BC342.

RA38.—Rectifier, 15kva. Output is 15,000v. at 500 mA., variable. Weight 2040 lbs.

RA-58A.—High voltage supply, 500-1500 volts at 35 mA., variable for breakdown tests.

RA63A.—Rectifier, 115v. 60 cycle. Output 12v. 8 amps.

RA105.—Rectifier, 117v. 60 cycle input. Output 2,000v., 610v., 415v., 300v., 200v., all d.c., plus 6.3v. a.c.

RAK-7.—Navy Rx, 9 tubes, 115v., 15 Kc. to 600 Kc.

RAX1.—Rx, 4 bands, 200-1500 Kc.

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RAX3.—Rx, 5 bands, 7-27 Mc. (2.25 Mc. i.f.). All operate from 24v. dynamotor.

RC150.—I.F.F. equipment used with SCR270 and 271.

RC188A.—I.F.F. 157-185 Mc., Tx-Rx-Indicator. 62 tubes, 110v. a.c. 60 cycle.

RL-9.—Interphone amplifier, 24v. d.c. dynamotor.

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SCR578.—Gibson Girl Tx. Auto SOS for sea rescue.

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The Versatile Standing-Wave Ratio Indicator*

BECOME A BRIDGE EXPERT IN ONE EASY LESSON

BYRON GOODMAN, WIDX

JUDGING by some of the letters received at Headquarters and by remarks heard over the air, not everyone who owns a standing-wave indicator knows the several different jobs it can do around the shack. If there weren't a strict taboo against it, this article would have been called "Getting the Most Out of the S.W.R. Indicator." (There aren't any editorial objections to getting the most out of anything; the objections are to the overworked cliché.)

To make sure that we're all talking about the same thing, let's review a little. Back in the days before co-axial feed lines were available, very few Hams worried about the "standing-wave ratios" on their open-wire lines. A few studious types knew that such things existed on transmission lines, and a very few (non-operator types) probably could even make primitive approximations of the s.w.r. if their hands were forced. These primitive measurements consisted of trotting up and down the transmission line with a suitable indicator and finding the values of maximum and minimum voltage (or current). The ratio of the maximum voltage to the minimum voltage was called the "standing-wave ratio," and the hot shots called it the "v.s.w.r.," for "voltage standing-wave ratio." The resultant number turned out to be the same as the ratio of maximum current to minimum current. It meant very little to anybody but engineers.

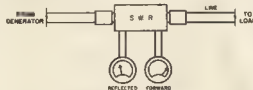
When W.W.II came along it brought, among other things, the rapid development of microwaves and waveguide and solid-electric co-axial-line techniques. One thing you don't do on microwaves is to get yourself mixed up with high standing-wave ratios, because the losses mount up and components like magnetrons and such don't remain on their best behavior. First efforts at measuring the s.w.r. in waveguides and co-axial lines involved the old trotting-up-and-down-the-line technique (using probes and slotted lines) and, frankly, it was very slow and a pain in the notebook. The slotted line is useful for measuring some other things but if all you want is a number called the "s.w.r." then something direct reading is more desirable.

The direct-reading instrument showed up after a while, in the form of a device called the "directional coupler." The standing waves on a line are formed when all of the energy isn't absorbed at the load; some of it is reflected back and, with the higher energy headed for the load, sets up the standing-wave pattern of maximum and minimum voltage (and current) points along the line. (The mechanics of all this is explained in many books, if you care to dig into it.) The directional coupler makes it possible to measure independently the energy in a line going from the generator to the load and also that reflected from the load back toward the genera-

● The s.w.r. indicator is a magical little instrument that is taken for granted nowadays, although slightly more than a decade ago you would have been burned at the stake (or at least roasted on the podium) for even suggesting that such a thing was feasible. Commonplace as it is today, however, the sad fact is that many owners don't know how to use s.w.r. information except in the most elementary ways. Read this article and you will see what we mean.

tor. A high s.w.r. occurs when much of the energy is reflected; a lower s.w.r. is obtained when little energy is reflected, and the s.w.r. = 1:1 when no energy is reflected.

The value of the directional coupler should be obvious. If for some reason we want to know the s.w.r. in a line, we don't have to trot up and down it (which gets to be difficult in most practical antenna installations); we can make our observations at the transmitter end of the line. With more and more solid-electric co-axial line in use by Amateurs, the directional coupler was a real boom. First one to appear was the Micromatch,¹ followed by the Twin-Lamp² and then the Monimatch³ with its several versions. There is an allied device called the "s.w.r. bridge" that will measure the s.w.r.,⁴ but it cannot be left in the line at all times the way the other devices can. It does, however, have an excellent place in the scheme of things.⁵



WHY KNOW THE S.W.R.?

But what good are these devices? Smart Hams could always tell when they had power going out the feed line; they used r.f. meters (thermocouple or hot-wire type, depending on the era) when they were in the chips, and they used flashlight bulbs or neon lamps when the groceries came first. But, you say, these modern transmitters with low impedance output have to work into a line that has a low s.w.r. (Not

necessarily so, but it's a popular misconception.) Phooey! Low-impedance output has been used for many years (ever hear of "link coupling"?), and we have been able to load transmitters, and properly, too. Suppose you have a Monimatch and a coax-fed dipole, and the indicated s.w.r. is 2.2; what do you do about it? (You tune up in the usual fashion, say you have "a fairly low s.w.r." and continue to operate, that's what you do!)

What we're driving at here is simply this: Many of the owners of s.w.r. indicators are merely using them as expensive output indicators and conversation pieces. They aren't beginning to make use of the capabilities of the instruments.

WHAT THE S.W.R. INDICATOR CAN DO

The Micromatches and Monimatches consist of (1) an instrument that you connect in the line, (2) a two-position switch, and (3) a meter. The switch points are labelled "Forward" and "Reflected," meaning that in the Forward position the meter reading is proportional to the power going toward the load, and in the Reflected position the meter reading is proportional to the power reflected (not absorbed) by the load. Whenever any reflected power is indicated it means that some of the power present is "wasteful" or "apparent"; this may foul up your thinking and confuse your arithmetic if you aren't familiar with real versus apparent power, or power factor, but don't let it throw you; the reflected power isn't dissipated in your transmitter, and all it ever does is run up your line losses some.⁶

Fig. 1.—Standing-wave indicators exist in several different forms and are identified by as many different names. The directional couplers discussed in this article all have three points in common. They are used in the line, they can handle the full transmitter power, and they measure the s.w.r. by comparing the Forward and Reflected power.

Sometimes the meters are calibrated in watts, but more often you merely use the relative readings. The meter can be calibrated to indicate the s.w.r., because the s.w.r. can be found from a comparison of the Forward and Reflected readings. A Ham with two meters could dispense with the switch and use a dual indicator like that pictured in Fig. 1. Don't let those fancy titles like "generator" and "load" scare you off; these are merely to show that the power source is at the left and the thing you're delivering the power to is at the right. The "generator" is usually your transmitter but it could be a driver stage or a signal generator; the "load" is usually the antenna but

1 Jones and Sonthelmer, "The Micromatch," "QST," April, July, 1947.
2 Wright, "The Twin Lamp," "QST," Oct. 1947.
3 McCoy, "The Monimatch," "QST," Oct. 1946; "QST," Feb. 1947.
4 Pattison, Morris, Smith, "S.W.R. Meter for Co-axial Lines," "QST," July 1947.
5 Cordeman, "A Composite Test Set," "QST," Dec. 1955.

6 Goodman, "Losses in Feed Lines," "QST," Dec. 1946.

* Reprinted from "QST," June 1956.

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Model 9 5/32" (Push-on)	6, 12, 24-27½	8.3	0.25 oz.	6"	Hearing Aids, Radio and TV Sub-assemblies, Coils, Electronic Instruments, Model Construction, Electro-Medical, etc.
Model 12 3/16" (Push-on)	6, 12, 24-27½	12	0.5 oz.	6.25"	Radio, Television, and Telecommunications assemblies.
Model 18 3/16" (Push-on)	6	18	0.75 oz.	7½"	For heavier work, heat capacity equivalent to that of most 80 watt soldering irons.

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Amateur Radio, March, 1959

It could be the input circuit of a driven amplifier or a dummy load. Any of the power-handling instruments (Micro-match, reflectometer, Monimatch) have a negligible effect on the s.w.r. in the line to the left, but this isn't necessarily true of the resistive s.w.r. bridge referred to earlier.

In this enlightened age practically everyone knows what the meter readings will be when the load has a resistance equal to the impedance of the line. (The "impedance" of the line is determined by the physical and electrical characteristics of the line; you know RG-8/U to be 52 ohm line, RG-11/U to be 75 ohm line, and so on.) If the line is RG-8/U or some other 52 ohm line and the load is 52 ohms, when we turn on the generator the Forward meter will show something but the Reflected one will show nothing, as in Fig. 2a. The directional coupler is labelled "52 ohm S.W.R." to remind you that if it were designed for another low-impedance value we wouldn't get the same results (the Reflected meter wouldn't read 0).

This case with the load equal to the line impedance is of course a familiar

(2) In the line between transmitter and antenna coupler.

Permits adjusting the antenna coupler to give an s.w.r. of 1:1 in the line between transmitter and coupler, desirable with pi-network output and when a low-pass filter is used. The low s.w.r. a low-pass filter is used. The length of also minimises losses in this length of line, although this is usually of minor importance in what is normally a short length. Remember that your adjustments do not affect the s.w.r. in the line between coupler and antenna. However, you can use the s.w.r. indicator in the line between coupler and transmitter to measure the s.w.r. on the line between coupler and antenna.⁷

(3) To adjust coupling at input circuit of final amplifier, when amplifier is coupled to driver through coaxial line.

When this is done with driver and amplifier running at normal power, the resultant coupling condition for a mid-band s.w.r. of 1:1 on the short coupling line also gives the best band width, which means you don't have to retune as often when changing frequency within a band.

the s.w.r. indicator up at the antenna; if you have a light mast or tilt-over job that won't support you, rig up a string drape to adjust the capacitor with the antenna up in the air. The length of line usually isn't very important below 30 Mc., but above 50 Mc. the s.w.r. indicator is best used no more than a few wavelengths from the antenna. When the losses in the line begin to mount up, as they will in long lines at v.h.f., you will get indications of a match at the transmitter end of the line that aren't true at the antenna end. The extent of this effect is shown in Fig. 5. We've seen a coil of cable a few hundred feet long used as a dummy load for a v.h.f. transmitter; it made very little difference in the s.w.r. if the line was terminated or not.

(5) To check antenna resonance.

Another of the more useful applications. If an antenna is used as the termination for a line, the frequency of minimum (not necessarily 1:1) s.w.r. is the frequency at which the antenna is a pure resistance (no reactance), and this is the resonant frequency of the antenna. Thus to find the resonant frequency of an antenna fed directly by coaxial line, it is only necessary to vary the frequency of the transmitter until the frequency of minimum s.w.r. is found. (Don't just look for minimum Reflected power; you have to make sure that the Forward power is still there, and this will probably require a few coupling adjustments at the transmitter as you run over the band.) If the minimum s.w.r. occurs at the high frequency of the band and you prefer to be peaked at lower frequency, lengthen the antenna. If the minimum s.w.r. occurs at the low frequency end and you have your heart set on the high, make with the cutters.

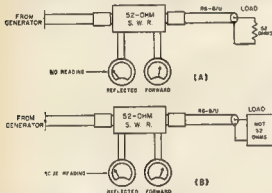


Fig. 2—(a) When the line is terminated in a load equal to the impedance of the line, the Reflected power is zero and the s.w.r. is 1:1.

(b) Any other termination will result in some Reflected power.

thing to anyone who has used an s.w.r. indicator. The load doesn't have to have an ohmic resistor as shown in Fig. 2a; it can be, and more often is, the radiation (plus ohmic) resistance of an antenna. A standing-wave ratio of 1:1 means that there is zero reflected power, and the losses in the line are a minimum when the reflected power is zero. The length of the line should have no effect on the s.w.r.; the s.w.r. is determined solely by the relationship between the line impedance and the load.

When the load is anything other than a resistance equal to the line impedance, some reflected power will be indicated, as represented in Fig. 2b.

USING THE DIRECTIONAL COUPLER

Getting down to cases, here are some of the ways you can use the directional coupler:

(1) To indicate resonance and proper coupling in the transmitter when no antenna coupler is used.

The way many Hams use the things, by tuning the output amplifier for the highest indication of Forward power without burning up the transmitter. Manufacturers of s.w.r. indicators certainly don't object to this application, but a less-expensive indicator will serve just as well.

(4) To adjust matching section between antenna and line.

One of the very useful applications. The adjustment of a gamma match is a cinch with an s.w.r. indicator, and sheer guesswork without. With the antenna resonant (formula length) merely vary the gamma until a 1:1 or very low s.w.r. is indicated. The gamma match with an adjustable capacitor is the most convenient to use. If you can climb the tower you can use

⁷ Granzer, "Universal S.W.R. Measurements with a Coaxial Bridge," "QST," Dec. 1950.

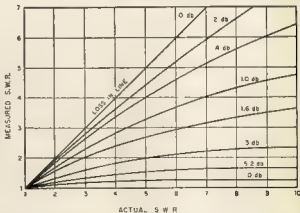


Fig. 3—Indicated s.w.r. as a function of true s.w.r. This clearly demonstrates the need for measuring the s.w.r. near the load when making adjustments at an antenna, and a loss (loss) line is used. (From an article by John Lory, by courtesy of Electronics magazine.)

You might be tuning a dipole made of No. 12 wire, or one of the new XTC4U specials (the one made from 14 beer cans and a piece of wet string); you can still use the technique. Just remember to make the resonance check with no matching section between the antenna and the line,⁸ and be sure you find the minimum s.w.r. and not just the minimum Reflected power with some fixed transmitter coupling.

⁸ The line should be connected in the centre of a halfwave antenna or in a current loop (point of maximum current) in a long wire.

The above is based on the fact that near resonance the radiation resistance of an antenna changes slowly. Considering it to remain constant about the resonant frequency, any reactance added to the resistance will increase the s.w.r. when this antenna is used as a load for a line.

If you have any curiosity about your antenna, you can even get a fair idea of what the antenna impedance is, just by measuring the s.w.r. at resonance and then making an educated guess. For example, suppose the s.w.r. turns out to be 1.6 at the resonant frequency, and you are using 52 ohm line. You

know that the antenna impedance must be either 83.2 ohms (52×1.6) or 32.5 ohms ($52 \div 1.6$), from the relation $Z_0 = R_1 (s.w.r.) - R_2 \div (s.w.r.)$

where

Z_0 = Line impedance.

R_1 = Resistive termination smaller than Z_0 .

R_2 = Resistive termination larger than Z_0 .

Your educated guess would probably be the 32.5 ohms, in the case of a multi-element beam.

If your meter reads Forward and Reflected power, the s.w.r. can be determined by the use of Fig. 4.

EFFECT OF HARMONICS

There may be occasions when the Reflected reading will run higher than the Forward. This doesn't necessarily mean that the unit has gone haywire; in most cases it will be an indication of a serious u.h.f. or v.h.f. parasitic oscillation in the transmitter. In the case of a c.w. transmitter, the Reflected reading may jump up to a high value as the key is closed and then drop down to a more normal value; this means that there is a momentary v.h.f. or u.h.f. parasitic oscillation as the key is closed.

When you are getting down to very low readings of reflected power, you have to avoid any appreciable spurious content in the transmitter if the load you are adjusting is frequency sensitive. In other words, if you are adjusting something that tunes, like a gamma match or an antenna coupler, it will give a proper termination for the line at only one relatively narrow band of frequencies. You will tune and tune and never get the s.w.r. down to 1:1 if there are a few watts of harmonics or overtones in the transmitter output.⁸ These days most transmitters are fairly clean, but the point is mentioned on the off chance that one or two readers may beat their brains out trying to match up something that is matched all the time. Most Hams don't try to match this close, but there are a few pernickety ones and we want them to be happy, too.

⁸ Grammer, "Notes on S.W.R. Measurement," (Technical Topic), "QST," May 1952.

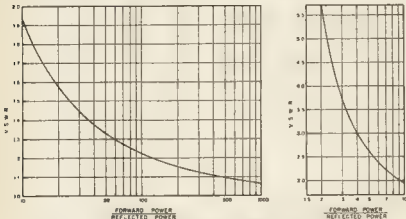
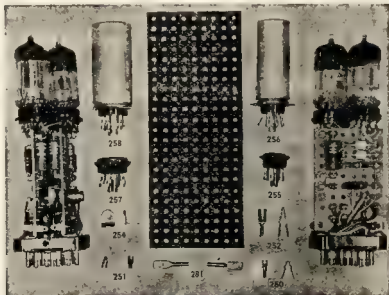


Fig. 4.—Graph of s.w.r. versus ratio of Forward to Reflected power. Use the chart on the right for low power ratios.

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MEET THE OTHER AMATEUR
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ALAN BROWN* VK3CX

INTEREST in Amateur Radio commenced in 1923 with a home-made crystal set, but Alan had to wait until he reached the age of 18 in 1928 before he gained his A.O.C.P. and commenced operation as VK3CX on the old 32 metre band.

Amongst his early memories of those days, one is outstanding. He was QSO-ing VK3RX (now VK3ARX), who lived about three quarters of a mile away. Both operators criticised the other's signal to such an extent that they agreed they should hear their own signals; so, leaving all switches in the appropriate positions, VK3CX went to VK3RX, and VK3RX went to VK3CX and again made QSO, each then listening to his own signal. The result was that each of them re-built immediately.

Many transmitters have been built since that first rig which used a UX201A in a split Hartley circuit—the power supply being four "slop" jars with the 230 volt a.c. mains on them.

The present transmitter is a Geloso v.f.o. driving straight into a pair of 6146s in parallel, running cool at 100 watts. Incidentally, the Geloso is also underloaded—it is rated at 425 volts, but only 325v. is used. The circuit is a modified version of the pi-coupled all-band affair which is well known. The antenna is a short "longwire" type, being 14 waves long and fed at 1 wave with 150 ohm pair. It is about 20 feet high.

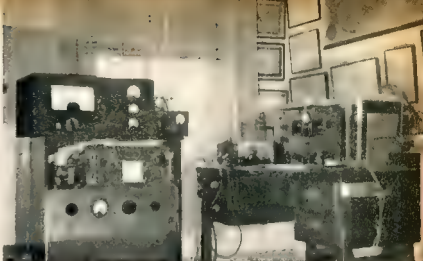
The receiver was once an AMR200 (a modified version of the Super-Pro), but this has been considerably modified—seven stages have been replaced with modern tubes.

Additional equipment is a Heath Kit "CQ" Multiplier, a Barker & Williamson electronic transmit-receive switch, a Class "C" wavemeter, a multimeter and the usual gadgets that make for successful operation of a Ham Station.

Many certificates decorate the walls, and amidst awards for overseas contest placings, are awards for DXCC, W.A.C., W.A.S., W.B.E., B.E.R.T.A., R.C.C., O.T.C., W.A.P., W.F.E., W.A.N.E., W.J.D.X.R.C., W.F.J.S., D.U.F., W.A.S.M., KZ5-25, WAJAD, 50P-50W, W.A.N.A.C.A., D.P.F., C.A.A., W.A.C.-Y.L., O.H.A., KP4-25, W.A.Z. and it is understood that he is eligible for many others. He is also a member of the First Class Operators' Club (F.O.C.) and the A1 Ops. Club. It was noticed that in several of these Awards mention was made of the fact that he was the first VK to achieve them.

Although present operation is mainly on 14 Mc. c.w., VK3CX has worked on all bands from 5 to 80 metres, but he says that at present he is sticking to 14 Mc. as it offers the best opportunity for DX ragchewing.

* 8 Mangara Road, Canterbury, N.Z. Vic.



We asked why he didn't use telephony and were told that although he had made W.A.C. on phone pre-war, he preferred c.w. which, he says, "he reads more easily than phone".

VK3CX, during the day, is Secretary to the Minister of Transport, and we accidentally discovered that Ham Radio is only a sideline as his main interest is philately—he is a member of the Executive Council of the Royal Philatelic Society of Victoria.

The 1939-45 war did not curtail his operating to any great extent as he was

a member of the R.A.A.F. Wireless Reserve and with many other Hams was called up early in September 1939. After service as a W/T operator, he gained a commission as a Signals Officer and was eventually promoted to the rank of Squadron Leader.

DX worked is 280 countries, with over 250 confirmed post-war, and Alan denies that it was in respect of him that the famous quotation was made recently—"Oh him. He's worked more countries than he can get cards from!"

RUSSIAN PHONE CONTEST

The U.S.S.R. Central Radio Club is organising an International Radio Telephony Contest of Radio Amateurs to be held on March 11-15, 1959, in honour of the Centenary of A. S. Popov, the great Russian scientist, and invites Radio Amateurs to take part in this event.

A Radio Amateur of any country may score as many points as he can for contacts with Radio Amateurs from different countries participating in the Contest. Time of the Contest is 2100 GMT on March 14 to 0900 GMT on March 15, 1959.

Bands to be used are 20, 21, 14 and 7 Mc; on telephony only. All participants should exchange five-digit control numbers made up of RS and the ordinal number of the contact, e.g. 39003.

General call during the Contest will be "CQ Test". The list of countries will be that internationally used by Radio Amateurs.

During the Contest only one Radio contact with the same Radio Station will be taken into consideration.

Each contact with stations of different continents, irrespective of the band, will yield two points.

Each contact between stations of the same continent, but not within the same country, will yield one point.

NEW ADDRESS FOR MAIL TO "AMATEUR RADIO"

All manuscripts, notes and correspondence to "Amateur Radio" should be forwarded to:—

P.O. BOX 36,
EAST MELBOURNE, C.2,
VICTORIA.

Each contact between stations within the same country will be disregarded; it will be taken into consideration only for the country as a multiplier.

The total number of points gained by a participant will be multiplied by the number of countries with which he established contacts.

Diplomas will be issued to the first ten placings in each country. Memorable cards will be sent to all participants of the Contest.

Each participant, irrespective of the number of points scored, should make a report which should be sent to the Chief Judging Board not later than five days after the end of the Contest. Address: The U.S.S.R. Central Radio Club, P.O. Box 101, Moscow, U.S.S.R.

The report shall contain: Call sign of station, christian and surname, town, transmitter input, the total number of points scored in the contest. The log to be made up of seven columns: Date, band, time (GMT), correspondent's call sign, control number received, control number sent, points. Also to appear are the number of points for the contact number of countries, and total number of points. Sign your name and date.

U.S.S.R. DIPLOMA "W-100-U"

The Diploma "W-100-U", issued by the U.S.S.R. Central Radio Club, is given to Radio Amateurs who have established two-way radio contact with 100 different Amateur Radio Stations of the Sverdlovsk Region. A. S. Popov's birth-place, in the period of January 1 to December 31, 1959.

Both telephone and telegraph radio contacts established in one or several Amateur bands 3.5, 7, 14, 21 and 28 Mc are taken into consideration.

337 and 338 are minimum RST and RSM for being awarded the Diploma. To be awarded the Diploma it is necessary to send to the U.S.S.R. Central Radio Club 100 QSLs confirming the establishment of radio contact. A list of the contacts, indicating date, time, band and technical data of the QSO, the correctness of which is certified by central radio club or the W.L.A., may be forwarded in lieu of QSLs. Forwarding address: U.S.S.R. Central Radio Club, P.O. Box 85, Moscow, U.S.S.R.

W.I.A. Victorian Division's New Premises

IT is November 19, 1958. A group of people stand on the footpath in the shade of a tree outside a two-storey house, No. 478 Victoria Parade, East Melbourne. An auctioneer is extolling the virtues of the place and calling for bids. The group include Divisional President VK3YS and Hon. Secretary VK3JL. VK3NJ is bidding on behalf of the Victorian Division. They already are well aware of the virtues, but have to think too of all the members. A tense and exciting moment—and success for the W.I.A. History in the making. The bidding ceases at £5,125. Some head-shaking in the negative, they want more. VK3NJ negotiates, it is all over in a matter of minutes. We obtained the property for £5,500—a bargain.

Thus ended a long and difficult search for a home for the Victorian Division Headquarters, we have obtained our own premises. No more threats of ejection or increasing rent charges. Away from the city noise, but still easily accessible to all members.

Where had all this started? In searching for information about the occupation of the old rooms at 191 Queen St., some interesting facts concerning rooms and meeting places came to light. Victorian wireless experimenters first got together as an organised body in 1910. One meeting place was in the Oxford Buildings in Bourke St. After W.W.I., meetings were held in the old A.W.A. building, Little Collins St., then in 1920 they moved to a room in Arcade Hall, Chapel St., Prahran. Later a shift was made to Kelvin Hall, Collins Place. Incidentally, during the 1920's a block of land in Burwood was purchased by the Division and a brick building erected thereon. VK3BQ built and installed the transmitters. However, due to its remoteness (at that time), members would not travel to the site and little use was made of the building. The property was eventually sold.

In 1934, after some years at Kelvin Hall, the rooms at 191 Queen St. were acquired on a rental basis. "Amateur Radio" for September of that year contains quite a few expressions of pleasure in reporting this acquisition. (Of passing interest, an advertisement in the same issue indicates that the full member's subscription was £1 per year. A substantial sum in those days.) The Division now had its own office, transmitter, library, A.O.C.P. classroom and meeting place under one roof.

Shortly after W.W.2, an Administrative Secretary was installed. The only Division to have its own rooms complete, located in a central spot and which now were open during the day. There was only one logical improvement to this, purchase our own rooms. In any case it was known that sooner or later a move would have to be made. The owners wanted 191 for their full use. And there was the disquieting news that rent controls were to be lifted in August 1959. Rental charges would have soared beyond our means.

Over recent years the search for a suitable place has been going on, with East Melbourne the favoured spot although a difficult one—places scarce and prices high. Buildings were inspected in South Melbourne, Carlton, etc. Suggestions from VK3OM checking newspaper adverts, revived our interest in East Melbourne. The property at 478 Victoria Parade (amongst others) was

discovered and members of the Building Committee and Council inspected it. All were impressed with the good condition and general layout. Time was short, this was only a few weeks prior to the auction date. Hurried meetings, legal enquiries, the final decision.

And here it is—on this page you will see a photograph and on the opposite page plan drawings of the two floors.



Victorian Division's new premises at 478 Victoria Parade, East Melbourne

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The building is an old brick house, recently renovated and largely rebuilt. All rooms had been decorated in modern bright colors and wallpapers. The large room on the second floor meant no further alteration necessary, just right for A.O.C.P. class and lecture room. Other rooms will serve as xmtr. room, library, reading room, etc. There is a bathroom; a kitchen with electric stove, stainless steel sink and cupboard. Internal and external toilets.

As has been mentioned before in our Divisional notes in "A.R." and over VK3WI, working "bees" got on the job in early January to prepare the place for initial occupation. Floors were punched and sanded. Lino laid, sealed, and polished in all rooms except bathroom and kitchen. These have concrete floors. Heavy power cable installed to xmtr. room. Curtains hung on all windows. Equipment at 191 dismantled and transported to the new address—a hectic few weeks.

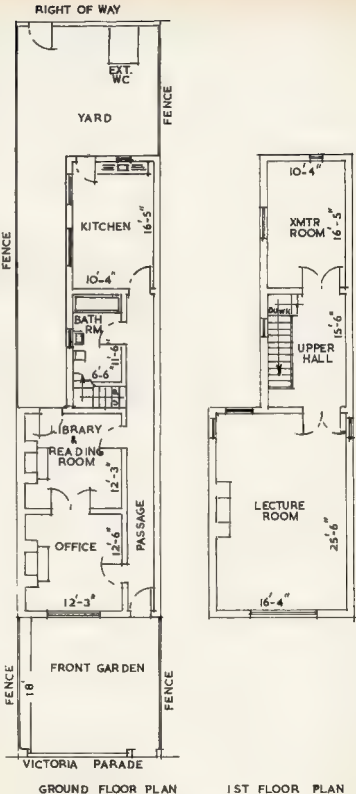
V.H.F., S.W.L. and A.O.C.P. instructional groups commenced their use of the lecture room late in January. The shifting of equipment and removal of aerials from 191 completed by the middle of February. Mrs. May installed as Librarian, etc., on Monday, Feb. 16. Follows the sorting out, planning of VK3WI, etc., and ideas for the future.

Country members should find the new premises of value. A place to meet your Amateur friends, read through the latest overseas magazines, even take a shave and clean up whilst waiting for the XYL to do her shopping. The location is on the south side of Victoria Parade, approx. midway between Simpson and Fowlett Sts., a few hundred yards west from Punt Rd. If you are coming from the city, take a tram in Collins St., or Latrobe St., heading for Kew, North Balwyn, Balwyn, or Mont Albert. Get off at Stop No. 20 opposite Powlett St. Victoria Parade is the continuation of Victoria St. where there is a double lane roadway, with the trams running through the plantations in the centre. The Eastman Reserve is opposite our block. Farther south, across Albert St. there is a children's playing park and tennis courts. Preliminary receiving tests seem to indicate a very low electrical noise level. All in all, quite a pleasant location.

Appreciation is recorded here to all those members who have so far assisted with this project and to those who have so willingly given their time in the preparatory work. Much yet remains to be done, aerials and equipment to be installed, cupboards and shelving for library, etc. And there is the important matter of finance. A deposit of \$2,750 has been paid. Our long established building fund came in very handy here. The balance and legal expenses remain. Let's get it paid off and avoid high interest charges. To cover this, a debenture scheme is being prepared and members are urged to support it to the full.

By the way, check "A.R." for last January, page 21—we have residential neighbours, so cut the noise, especially late at night; do not park cars at any time in the adjoining laneways; keep the place clean and tidy. It is your property—take an interest in it.

Note—In future, please address all mail to P.O. Box 36, East Melbourne, C.2. New phone number is JA 3535.



SEPTEMBER-DECEMBER, 1958

NEW CALL SIGNS

25K - New South Wales
 25ST - K. J. Ledaam, 2 Ivor St., Lidcombe
 27U - W. G. Weiss, 37 Linthorpe Ave., Croydon
 27UL - D. Ewing, 19 The Crescent, Dee Why
 2XK - G. Scott, 17 Thompson Cres., Sth. Sydney
 27Z - O. C. Winterton, 7 Cross St., Balgowlagh
 2AA - F. A. Fisher, 35 Carters Lane, Wollongong
 2ACQ - J. Pearson, Fredericks St., Narrandera
 2ADA - R. F. Daniel, 27 Broughton St., Camden
 2AEZ - J. Marstella, 34 Gallipoli St., Lidcombe
 2AHV - W. E. MUI, 61 Elwin St., Narrandera
 2ALA - F. T. Adams, 36 Brougham St., East Maitland
 2ALR - R. K. Richardson, 18 Bowden St., Parramatta
 2AMA - C. J. Malnof, 195 Church St., Wollongong
 2AMB - J. J. Baty, 21 Hawkins St., Artarmon
 2ASB - A. J. Bowman, 107 Cronulla St., Cronulla
 2ASI - J. Sullivan, Newcastle Sun, Bolton St., Newcastle
 2ASV - K. J. McEwen, Excalibur Parade, Sydney
 2AWF - B. J. Foster, Avoca, "Biala," via Gunning
 2AXI - M. McCosker, 122 Warials St., East Maitland
 2AKX - D. A. Kinsella, Christian Bros. College, Crown Lane, Wollongong
 2EAL - J. E. Smith, 23 Cross St., Croydon
 2ECB - E. Berlage, 10 Telwally St., Woolahra
 2ECL - R. F. A. Lopez, Davies Rd., Smithfield
 2ECT - J. Butcher, 12 Rossby St., Waverley
 2ECT - C. Grant-Thompson, R.A.A.F. Wollamilton
 2EER - F. J. Flynn, Experiment Farm, Yanco
 2EEB - E. J. Mason, 55 Carrington Rd., Warrington
 2EET - R. W. Luther, 525 Blackland Rd., East Maitland
 2EWE - B. Walker, 6 Taylor Close, Miranda
 2EFC - K. J. Collins, 1 Melrose St., Epping
 2EZF - J. Lak, Lot 22, Douglas Rd., Donsonville
 2EZH - J. E. Butler, 1 K. Rossby St., Waverley
 2ENIK - K. M. McKee, 44 Miner Cres., Wollstonecraft
 2ENQ - K. J. O'Brien, 28 Ireawang St., Raymond Terrace
 2ENP - M. F. Potts, 33 View St., Waverley
 2ERW - R. Foster, 43 Rose St., Grenfell
 2EVB - W. Nichol, 1 K. Rossby St., Waverley
 2EVL - New Lambton

Victoria

1BX-P. E. Indan, 1 Bishop Court, Mt. Waverley.
 2DF-M. Dalton, 35 Collins St., Mentone.
 3BN-J. P. Clarke, Always St., Mitcham.
 5FD-B. M. Ferguson, No. 2 Second Court, McGowan Ave., West Preston.
 6JA-Hunt, 19 The Boulevard, Kildon.
 7IF-J. J. Fennell, 21 Denaville St., Beaumaris.
 8IW-C. T. Biggs, Inglewood St., Raywood.
 9OK-J. Craddy, Fishermen's Bend Hotel, Lorimer Road, Port Melbourne.
 10U-W. Wallace, Stationers' Amphitheatre; Postal: Area Workshops, Bandiana.
 11VC-O. D. Robinson, 24 Warrendale Rd., East Melbourne.
 12WD-J. J. Andersen, 153 Maitlie Rd., East Bentleigh.
 13AC-J. P. Crooks, 148 Queen St., Colac.
 14CF-C. Pratt, 20 Warrah Ave., Tallamaringe, via West Broadmeadows.
 15CW-C. A. Welsh, 15 Alan St., Highgate.
 16HZ-W. H. Hanson, 14 Cavalier St., Oakleigh.
 17AU-J. I. Kelleher, 3 Paine St., Newport.
 18JD-A. J. Robertson, C/o. Herald-Born TV Station, Colac.
 19AJ-D. W. Gault, 21 Ford St., Ringwood.
 20AK-A. Kasmalas, 34 Rawen St., Bendigo.
 21OA-K. F. Alcock, "East Wood", Basina Road, Cres. Colac.
 22AR-A. A. F. Liverson Radio Club, R.A.A.F. Base, Laverton.
 23SE-C. G. Anderson, Blackburn St., Strathfeld.
 24SH-J. L. C. Hart, 38 Charles St., Burwood.
 25ZE-Z. J. Rasmussen, 541 St. Kilda Rd., Melbourne.
 26UM-E. Minnis, Wilson St., Berwick.
 27YH-J. M. Hamilton, 37 Brydell St., Reservoir.
 28YE-W. A. McClymont, 35 Arthur St., Fairfield.
 29ZJ-D. G. Johns, 55 Liberty Pde., West Heidelberg.
 30AC-C. R. 163 Derby St., Kew.
 31BA-M. W. T. Cherry, 11 Nelson St., Footscray.

12BDB—R. Griffin, 14 Emily St., Murrumbidgee.
 12BEJ—A. A. Retchford, 9 Summit Rd., Burwood.
 12BEO—C. P. O'Brien, 704 Peel St. N. Ballarat.
 12EQM—M. A. Robinsons, 43 Marina Rd., Mentone.
 12EPQ—J. Locking, 6 Inverness Way, North Balwyn.
 12EFS—A. J. Stewart, 11 Woodstock Rd., Surrey Hills.
 12EFT—R. G. Terrill, 67 Crocydon Rd., Mt. St. Helens.
 12EFG—J. W. Baker, 64 Lily St., Bendigo.
 12FFX—G. E. Begg, 157 Banksia St., Heidelberg.
 12GGD—A. C. Stebbing, 31 Rupert St., West Footscray.
 12GGG—J. W. Harding, 24 Prospect Hill Rd., Camberwell.
 12GHN—J. J. Helmond, 274 Dorset Rd., Berwick.
 12GIL—J. G. Williams, 184 Shepparton Rd., Geelong.
 12GJO—J. E. Orr, 19 Maribyrnong Rd., Ascot Vale.
 12GQP—J. Peynier, 17 Perth St., West Heidelberg.
 12ZHW—A. M. Hurwood, 114 Graunge Rd., Alphington.
 12ZIR—J. L. Seerdenam, 49 Cookson St., Camberwell.
 12ZIJ—J. R. Johnston, A.R.D.U., R.A.A.F. Base, Laverton.

Queensland

41BQ—C. G. B'nur, Station: 157 Bowden Rd., Townsville; Postal: 157 Bowden Rd., Townsville.
 41CR—R. J. Convey, 31 Anne St., Aitkenvale.
 41LW—Q. W. Haughton, 146 Station Rd., Oxley.
 41NO—A. J. Nassara, 80 Ducks St., Toowoomba, N.W.
 41O—A. Hansen, 161 Raymond Rd., Alderley.
 41OM—M. N. O'Burill, 27 Humphrey St., West End, Townsville.
 41VM—J. H. Hill, 21 Hill St., Wavell Heights.
 41WW—N. B. Walden, Dolby & Rankins Bldg., Pacific Highway, Surfers Paradise.
 42BX—J. C. Jones, 1000 Pacific Hwy., Coorinda.
 42BY—L. Guralnick, 120 Hardgrave Rd., West End, Brisbane.
 42EZ—M. C. Haughty, Station: 37 Charlotte St., Wynnum; Postal: 148 Braun St., Deagon.
 42CA—D. C. Price, Scoria St., Bilbois.
 42CB—R. J. Line, Lightbody, 25 White St., Wavall Heights.
 42CR—R. E. Hunt, Millora, via Munbilba, Fassett.
 42ED—K. B. Steel, 57 Ernest St., Manly.

South Australia

5EM—B. R. Meldrum, Adressana.
 5EN—B. G. Holbeche, 83 Nelson St., Port Pirie.
 5OG—D. A. Page, No. 1 A.T.U./T.A.S., R.A.A.F. Woomera.
 5JB—J. R. Bay, 44th St., Leigh Creek.
 5KK—K. Postler, 53 Ascot Ave., Dulwich.
 5KI—D. A. McArthur, 4 Francis Ave., Fullarton.
 5ME—J. G. McLean, 22 Celtic Ave., South Hindle Park.
 5MY—R. C. Henry, 44 Hampton St., Goodwood.
 5TN—J. G. Anderson, 53 Kingana Ave., King's Park.
 5EEZ—B. C. Cleworth, 4 Dunstan Ave., Kensington.
 5ECC—R. V. Lapsidge, 163 Angus Rd., Cottonville.
 5ZCE—K. B. Savage, "Gumbee," Stanley St., Leabrook.
 5EZF—P. E. Roatan, 20 Hawkebury Ave., Kilburn.
 5EDB—B. McCarthy, 82 David Ter., Kilkenny.
 5EDI—B. J. Burns, 18 Bernard St., Flindon.
 5EDJ—J. M. Shaw, 8 Birdwood St., Netherby.

Western Australia

6CS—C. E. J. Jones, Manager Windsor Hotel, Menda St., South Perth.
 6KH—W. K. Mobley, Gardiner St., Moore.
 6LS—J. E. Redding, 18 Fletcher St., Applecross.
 6EAL—L. G. Stimson, 70 St. Leonards Ave., West Perth.
 6EEZ—K. Chamberlain, 106 Cleopatra St., Palmyra.
 6ZCB—J. E. Bicknell, 115 Grand Promenade, Inglewood.

Tasmania

70K—D. H. Kelly, Cottage No. 10, Tarrarnah.
 70T—Georgina Anderson, Rials Club, C/o G. H. Cranby, 6 Barrack St., Georgina.
 7KS—J. A. Campbell, 58a Red Chapel Ave., Sandy Bay.
 7MX—M. W. Evans, Wesley Vale Rd., East Devonport.

Territory of Papua and New Guinea

90G—G. S. Kiernan, C/o O.T.C. (Aust.), Port Moresby, Papua.
 90GW—C. J. Wilson, Telegraph Office, Mt. Hagen, N.G.
 91W—J. H. Williams, C/o Telegraph Office, Dept. of Posts & Telegraphs, Goroka, N.G.

PRO-R - S. Curr, Station Gere Gere Ave.,
Boroko, Papua, Postal C/o Dept. of
Posts & Telegraphs Radio Inspection
Section, Port Moresby, Papua

WZHF - D. H. Francis, C/o. Boroko Radio &
Television Systems, P.O. Box 100, Port
Boroko, Port Moresby, Papua

Amateur

OAF - A. S. Flett, Wilkes

CCC - J. Cooke, Macquarie Island

OMC - M. J. Kostrowe, Mawson

GRH - R. L. Harvey, Wilkes

OTY - J. J. Turner, Davis

WZHF - H. P. Butler, Papua

CHANGES OF ADDRESS

27K— New South Wales
27G— G. C. Page, 20 Marshall Ave., Warrawee.
28C— C. M. Carter, 4 Albert St., Kempsey.
28V— V. J. Belgrave St., Koorah.
29T— T. W. O'Neill, 23 G'ds. Ave. Nth. Rydn.
29R— R. W. C. Chalmers, "Glencarrig," M'd.
29C— C. J. Mulcahy, 100 George Ave. Reversby.
29L— W. G. Lumb, 236 Old Northern Rd.,
 Castle Hill.
29W— W. Laid, 1635 Pittwater Rd., Mona
 Vale.
29B— A. C. Pearce, Lot 3, Washington Ave.
29I— C. Allen, 99 Avon Rd., North Ryde.
29J— J. Boyton, 98 Chamberland Rd. Beck-
 ley.
29L— W. S. Letham, Lot 8, Anderson Rd.,
 Mt. Pritchard.
29S— N. C. Scott, 181 Michael St. Jesmond.
29G— G. W. Wozley, 17 Margaret St. Sirob-
 urn.
29T— E. K. Whiffled, 10 River Rd., Ontlay.
29B— B. J. Wain, 25 Ruse St., Sirob-
 urn.
29R— R. F. V. Crews, 55 Wycombe Rd., Neut-
 ral Bay.
29Y— Y. J. Perrett, 50 Workshop Rd., Cardiff.
29D— E. A. Phipps, 63 Scyalia Rd., Oyster-
 Bay.
29B— B. E. Birley, 11 Mulgrave St. Mosman.
29I— H. Stanley, 5 William St. New Lamb-
 ton.
29B— B. J. O'Sullivan, 6 Springfield Ave.
 Fern.

Victoria

APB—A. H. Bowley, 49 Harco Ave., Nuanetsi.
3BC—B. D. Cooper, 10 Mary St., Cologrug.
3EY—D. N. Freckleton, 8 Firebrace St., Horsham.
3FY—K. F. Chick, 2 Eurythmic St., Mordiallo.
3LC—C. A. Ellis, 3 Ivy Court, Moorabbin.
3NW—C. J. Faggart, 37 Ryeburne Ave., Hawthorn East.
3OY—W. D. Illies, 9 Commercial Rd., Menton.
3PN—D. B. Schroder, Stationary; Mangalore Air-
mail; Mangalore; Postal: P.O. Box 10,
Avenel.
3RU—R. F. Kynes, 6 Loloma St., Burwood.
3SV—J. M. Smith, C/o 299 Richardson St.,
Middle Park.
3SW—J. M. McConnell, 2 Adelaide St., High-
gate.
3TF—C. J. Dennis, 318 Francis St., Yarraville.
3TW—W. H. Helliar, Lot 131, Elizabeth St.
JRM—C. M. Churchward (Mrs.), 26 Barbara
St., Vermont.
3VL—E. J. Churchward, 26 Barbara St., Ver-
mont.
3XK—C. A. Hyatt, Lot 39, Bonellie Rd., High-
gate, Geelong.
3YL—A. M. Clark Mrs., 1871 Dandenong Rd.,
East Malvern.
3YU—R. C. Smith, 43 Williams Rd. Blackburn.
3AY—M. C. Smith, 11 King St., Mo. .
3AFL—S. L. Skinner, Lot 316, Aurum Cres.,
Ringwood.
3AW—E. H. Swindon, 87 Brighton Rd.,
Elwood.
3ALR—L. H. Allen, 8 Kalang St., Blackburn.
3AMG—C. W. Meech, 24a Kemp Ave., Mount
Waverley.
3APT—L. J. Laughton, 43 Metheral St., Sun-
shine.
3APX—D. Davies, 30 Wynnstay Rd., Ess-
endon, Prahran.
3AWD—W. D. Mather, 1 Pasadena Ave., Beaumaris.
3AWH—W. Sampson, 27 Bayne St., Bendigo.
3AWR—W. E. Knopp, 23 Cartwright St., Glen-
roy.
3AXK—E. T. Turnbull, 11 Higham St., Chel-
tenham.
3AYM—O. A. MacFarlane, Riverview Guest
House, Riverine St., Balmrae.
3AZA—A. M. MacFarlane, Station 397, Cliff
Cliffs; Postal: P.O. Box 34, 397 Cliff.
3AZK—J. L. Thomassin, 1 De Blonay Cres.,
Mordiallo.
3AZV—P. E. Lindeh, 1 Bishop Court, Mount
Waverley.
3ZAS—A. H. Hillwell, 9 Cobden St., Bendigo.
3ZAW—M. M. Williams, 43 Mercy St., Bendigo.

3ZBG—J. G. Goodall, 14 Grosford St., North Summerville.
3ZDK—K. J. McLaughlin, Station: "Whispering Trees", 157 Mt. Dandenong Rd., Croydon, Postal P.O. Box 80, Croydon.
3ZEK—D. D. Watson, 66 Newcastle St., Preston.
3ZEW—L. T. White, 50 Baker Pde., Ashburton.
3ZGK—D. J. Knox, 5 Rotherwood St., Ivanhoe.
3ZGT—L. N. Tait, 5 Rotherwood St., Ivanhoe.

Queensland

4AG—A. J. Greenham, The Crescent, Kallangur.
4AX—M. R. Danby, 331 Severin St., Cairns.
4BI—J. Bermingham, Station Incombe Rd., Longwood, Postal: C/o. Dept. of Civil Aviation, Longwood.
4DK—A. J. Kelly (Dr.), 80 Wickham St., Ayr.
4EP—E. P. Bell, 97 Juddes Ter., Bardon.
4EP—E. J. Parow, Station: C/o. Mr. Rose, Mt. Kynock, Toowoomba; Postal: Box 21, P.O. City North, Toowoomba.
4FE—A. S. Burles, 68 Rosedale St., Highgate Hill.

4GT—W. G. Heaton, 8 Gibbon St., East Ipswich.
4ND—G. D. Gengerfeld, Station: Cr. 14a and Ninth Aves., Home Hill, Postal P.O. Box 62, Home Hill.
4OC—E. B. Connor, Ronnoe Downs, Fernless.
4OH—H. T. Overend, Station: Johnstone Rd., Mossman; Postal P.O. Box 264, Mossman.

4PW—D. W. Presland, Garrick St., Collingville.
4RR—K. W. Beale, Gregory St., Cloncurry.
4SG—R. S. Grantham, 24 Deloraine St., Wavell Park.

4SW—W. W. Stacey, 18 Hunter St., Maryborough.
4TD—T. A. Dale, London Rd., Eight Mile Plains.

4XM—W. A. McDylitt, 223 Lake St., Cairns.
4ZAB—T. E. Meredith, Davidson St., East Ipswich.

4ZBD—D. B. Hughes, Station: No. 3 Oathic Court Place, Clontarf Beach; Postal: C/o. P.O. Clontarf Beach.

4ZBM—D. Moller, Station: R.A.A.F. Transmitting Station, Belgian Gardens, Townsville; Postal: Base Squadron R.A.A.F., Gresham, Townsville.

4ZBP—T. F. Poal, Station, Employees' Quarters, Johnston Motors Ltd., Goodwood, Winton; Postal: C/o. Johnston Motors Ltd., Elderside St., Winton.

4ZBS—L. J. Street, Cr. Fleming and Farreit Sts., Yandina.

South Australia

5NN—G. F. Barton, 62 Marlborough St., Malvern.
5CX—C. E. Moulis, 58 Sussex Ter., Westbourne Park.

5DM—R. F. Mills, 15 Taylor Ter., Rosalie Park.
5DS—D. Scott, 33 Albert St., Windsor Gardens.
5ES—D. E. Hauber, 230 Glen Osmond Rd., Fullarton East.

5LG—G. F. Lucas, 3 Seventh Ave., Trinity Gardens.
5QW—B. G. Wright, 21 Robert St., Brighton.
5RL—R. L. Larson, 20 Larkin Ave., Northfield.
5TL—T. Leidler, P.O. Residence, Renmark.

5UX—L. Wallbridge, Hawker.
5WM—W. J. C. Bayly, 90 Halsey Rd., Henley South.

5ZBL—B. J. Warman, 2 Yarralla Ave., Klemzig.
5ZBR—B. C. Gower, Flat 3, Transmere House, King's Grove, Transmere.

Western Australia

6AJ—A. J. Jeffrey, 3 Darlot Cres., St. Perth.
6AK—G. H. Lee, Marlow Ave., Armadale.
6RW—A. D. Hawksworth, 13 James St., Nedderdale.

6GA—G. W. R. Ashley, 31 Plinders St., Mount Yokine.
6LS—L. E. Edgington, 85 Normanby St., Inglewood.

6LU—L. H. Stage, 58 Expanse St., Victoria Park.
6MA—A. M. Austin, Childers St., Coma.
6SC—C. A. Pinkus, 29 Eric St., Coma.

6SK—A. A. Skinner, 146 Boulder Rd., Kalamoorie.
6TR—T. M. Reed, 39 Ada St., Watermann Bay.
6ZAH—L. K. Gooding, Darkan.
6ZAN—R. J. Skavington, 194 Labouchere Rd., Coma.

6ZB—B. J. Clarke, 115 Carr St., West Perth.
6ZBV—B. R. Pryor, C/o. R. Whiting, Gooseberry Hill Rd., Malda Vale.

Tasmania

7EJ—E. J. Cruise, 46 Colville St., Battery Point, Hobart.
7FM—T. F. Moore, 33 McGuinness St., Lenah Valley.
7FF—P. D. Frith, Upper Nicholas St., Devonport.

Territory of Papua and New Guinea

8AA—R. H. Harrison, C/o. Dept. of Posts & Telegraphs, Goroka, N.G.
8AB—R. A. J. Taylor, C/o. Dept. of Posts & Telegraphs, Port Moresby, Papua.
8TC—T. M. Cole, C/o. Dept. of Posts & Telegraphs, Kavieng, New Ireland.
8WL—J. Widdup, C/o. Dept. of Posts & Telegraphs, Sohano, N.G.

CANCELLED CALL SIGNS

New South Wales

VK—
2AP—A. P. Reynolds.
2CH—N. McNeill.
2PB—B. Smith.
2PO—R. B. Reeka.
2PW—R. W. Bishop.
2ZV—D. A. Hende.
2AKL—A. Fairhall.
2ALD—R. Smith.
2AQA—C. F. Cicek.
2AQC—P. R. Ladd.
2AQZ—B. K. Brown.
2AUP—K. Porter.
2AVY—V. Ramsey.
2ZCK—L. M. McCook, (Now VK3AKI).
2ZDS—A. J. Bowman, (Now VK2ASB).
2ZET—R. Foster, (Now VK3AWF).
2ZJS—K. G. Scott, (Now VK3JSS).

Tasmania

3EG—R. A. H. Russell.
3WE—A. R. Wilson.
3ADC—D. Charlton.

3AGA—M. N. Russell, Clarke.
3ALF—L. R. Fowler.
3ASE—J. W. Smith.
3AZJ—J. E. Linden, (Now VK3KH).
3ZAJ—J. E. Kallisher, (Now VK3ALJ).
3ZCJ—J. M. Hamilton, (Now VK3AYI).
3ZDJ—D. G. Johns, (Now VK3ZJ).
3ZDP—P. G. Thomas.
3ZDZ—W. H. Henson, (Now VK3AEH).

Queensland

4HG—H. G. Brown.
4HP—J. Murphy.
4WA—W. J. Barker.
4WR—R. F. Woolley.
4ZAM—K. N. Long, (Now VK3VH).
4ZAY—H. C. Coway, (Now VK4CR).

South Australia

5HJ—J. H. Clifton.
5HJ—A. E. McCann, (Now VK3EQ).
5ZOT—B. G. Widdeman, (Now VK3TN).

Western Australia

6RH—E. F. Robins.
6ZBD—W. K. Mobley, (Now VK3KH).

BOOK REVIEW

"RACE FOR LIFE"

By Jacques Remy

Many readers will already have seen and enjoyed the unusual French film "Race for Life", in which the crew of a French fishing trawler at sea was smitten by a deadly food poisoning. Their call for help was heard by a Radio Amateur in Central Africa and medical aid finally arrived through a tortuous maze of contacts via channels ranging from official to highly unofficial.

A translation of the original novel is now available. One sees immediately that a considerable amount of "revision" went into its preparation for the cinema. The original trawler was Swedish and the name of the disease with which the crew was afflicted is never mentioned. Characters were largely altered for the film, some being omitted and others substituted.

Many anomalies are evident to the technical reader. Skip distances are puzzling, call signs are incorrect (perhaps deliberately), operating procedures are unfamiliar. One "Amateur" finally decides that his rig might operate better if he erects an antenna. One is amazed at the thought of Italian smugglers using the Amateur bands for open speech communication between base and field party. Even more amazement is felt that the smugglers' base operator is sufficiently compassionate (and foolhardy) to act as a relay for the distress message, leading to his own discovery by police and postal officials.

The author, in perhaps typical French fashion, uses the whole episode of the distress relay as a background for a chain of sexual intrigues, reminiscent of "La Ronde". This mixture of sex and Amateur Radio seems peculiar to the Australian viewpoint, since in this country "Ham Radio" appears to have a somewhat opposite effect on the senses. There is a strong parallel with Koestler's "This Age of Longing", where East-West politics act as a puzzling basis for a textbook on erotic psychology.

Nevertheless, the plot moves steadily from scene to scene and the tension is well built up. Despite the apparent anomalies, or possibly because of them, the book makes very good reading.

"Race for Life", by Jacques Remy, Four Square Books, 3/6.
 —Reviewed by Laurie Walters, VK3GN.



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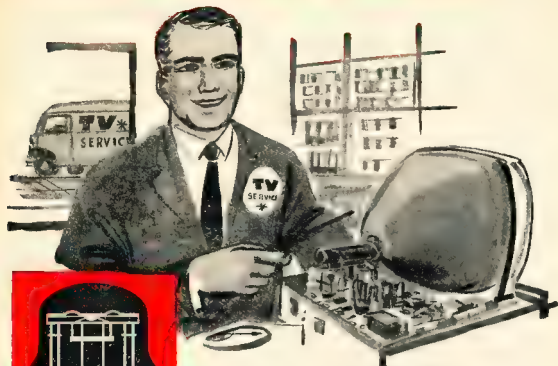
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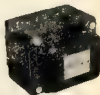
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This transformer has the primary tapped from 200 to 250 volts in steps of 10 volts, fully impregnated with the special "Q-PLUS" technique, ensuring freedom from moisture under any climatic conditions.

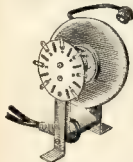
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EXU called CQ on the band. Gordon's supervisor wasn't going too well and we managed to have him a contact. With a little persuasion I think we could get Gordon to build a xtal controlled converter, hill.

We welcome Malcolm SZBH back on the band after a break of a few months, keep on fellow, the JAs will be through soon. Col SRO's 50 ft. tower went up on the holiday morning with the help of a 60 ft. mobile crane. The erection went along smoothly and all the concreting was finished by noon. Those in attendance were SZCR, SZSX, SZDL, BMT and SZAW. I understand that the 4-el. went up this last week-end. Whacko, the DX! While on the subject of towers, I understand that some VKJ boys were over here demonstrating 60 ft. collapsible lightweight suits for attaching to vehicles. It is also rumoured that two were purchased. By whom? Oh! That's a secret, but suggest you keep listening in a northerly direction and you might hear something.

The last week has seen cross-band activities. 30 to 144 and 90 to 288 mc with talk of building rigs for 144 mc. by those who have not been on this band before. Carl is very enthusiastic about 288 mc., but doesn't know where to stack all his beams, seeing that the tower is still in his mother's backyard.

The fox hunt will be over when this news goes to print, but information is that those participating will be Barry SZBZ, Graham SZAF, Ken BKC, Carl SZBL, Keith BMT, Bill SZAX and yours truly. I also understand that several associates are building converters and will join in the fun.

Moves are afoot to make available the v.h.f. bands for practice in c.w. by Z calls. It is suggested that practice take place in the second megacycle of the 50, 144 and 288 mc. bands. These frequencies will not interfere with DX working, will help to use the bands to the fullest extent, and provide an easy means of practice for intending candidates for the full licence.

A committee of six has been formed to enquire into and advise on the constitution and rules necessary to bring into being the proposed V.H.F. Group. They are SZCR, SZAW, BPU and three others elected by Council. Give them your support fellows, and bring forward your suggestions to help make this move a success.—SZAW.

WESTERN AUSTRALIA

Nothing much to report on this month as things have been quiet except for a little DX on 6 m. During Jan. a good time was had by all, frequent openings being experienced to VKS and VKZ. A few VKCs and 4s occasionally helped add variety. Incidentally, for the benefit of VKC3, we would hasten to say that the lack of VK6 slips into Melbourne was not through lack of activity over here; we just can't hear you. Perhaps some of the theorists can give us some reasons why nearly all the VK3 stations worked in Perth were from country areas. I am, of course, leaving SWG out of it. Some of you chaps don't seem to realise that Wally is as far from Perth as Canberra is from Melbourne. Work that one out and then remember that 67M and 62KE are a further 488 miles North of Perth. It's a big State! 3ALZ's beam seems to pay off, since he could be heard by 6BE and 6ZBZ when no other Melbourne stations were audible. Locations come into it here also, since 6BE is 1000 ft. above Perth, and 6ZBZ is the furthest city station from the hills and has a good location.

Beams are now turning north again waiting for the JAs. One reasonable opening was experienced during Jan. Several of the boys attempted to wrest numbers from the puzzled JAs to no avail. We think the longest distance prizes may come this way through for the 6ZMT-JA contacts, this being around 5000 miles. Since that day, however, nothing has been heard, with the exception of "old faithful" HUKA. This station has been so consistent over the last 13 months that with proper receiving equipment it could have been used as a pretty fair source of entertainment.

News has come through that the W.A. V.H.F. Group has obtained its incorporation papers and has also been granted its station licence. The call sign is VK6VP. A 50 mc. beacon will very soon be sending out this call auto. m.c.w. keyed carrier within the first couple of weeks in Feb. Power will be 50w. Freq. is uncertain at present, but will either be 50.2 or 51 mc. Operation will not be continuous, but as many hours as possible will be put in. Unfortunately the authorities imposed some rather stringent requirements here.

Think that's about it till next month, chaps. Good DX.—6BE.

TASMANIA

Well, the Horn Bull Contest is over again and I think, as others probably do, it's about time some changes were made in the rules. The present rules relate only to a DX Contest and I consider are against the principal and aims of the Contest. The scoring should favour the use of the high bands instead of the 30 and 90 mc. bands which, after all, are only more or less h.f. bands when the m.s.f. zone is high enough. We in VKT know just how many more VKAs there are to work on 2 mc when they require additional points to supplement 50 mc. contacts, but stations are non-existent when 50 mc. opens at the same time. It is suggested that separate rules should exist for 144 mc. and above favouring increase in activity on these higher bands.

144 Mc.—The band has been open to VK3 for 10 days of the month with best days on the 16th and 30th Jan. 17F, TBC, 7VL and 7LE have been active. 7RL worked first DX on the 18th after being caught with a xtal on 147 mc. He was able to later get another going on 144.3. He puts a good signal into Melbourne from his Stanley location. A converter is being finished to improve reception. 7PF worked with his beam down, but managed to work the stronger stations with a temporary 5-el. beam. Five new stations were worked including 3AGV, who for many years has been after VKT QSO. The 10-el. Vag is now 43 ft. and results so far show an improvement. A Parametric Amplifier is being experimented with for 3 mc. So far have only been able to make up the losses without actual amplification. For information see "CQ" Nov and Dec, 1955.

Col 7LE well up on the DX contacts, and the deletion of an r.f. stage from his converter resulted in a marked reduction in local station QRM due to mixer overload. TBQ contacts unknown but 3BQ was heard in contact with him. 2ZAI was on locally in Devonport but as yet is not prepared for DX contacts.

VK3 stations worked by VK7 during Jan. are as follows: 3ALZ, 3ZD, 3ZCGP, 3ZDW, 3BQ, 3ZEL, 3ZCZ, 3ZCN, 3ZG, 3FO, 3ZBS, 3ZAI, 3ZEL, 3ZBP, 3ZCN, 3ZEO, 3NB, 3ZFA, 3ZAT, 3AGV. 7LE worked 3ZBS/P running 1 watt input to a 4J6.—7PF.

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334 MALVERN ROAD, PRAHRAN, VICTORIA

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

Editor "A.R." Dear Sir,

I feel that the notice in Feb. "A.R." "Any Ideas Worth £5" raises some misgivings amongst the active VK DXers who have been hoping to see something done about the Australian DXCC Award.

Whilst I am writing the DX notes from
 time to time I made comment on the A.R.R.L.
 "country" for their DXCC Award and the dis-
 tinguish that exists between their list and the
 one of the International Commission for Radio-
 ticular purpose in mind, but now, not having
 the responsibility of the compilation of the
 page, let me say that in general I have
 been in the W.I.A. in following the
 A.R.R.L. for their DXCC listing which has
 become known to many DXers as the "A.R.R.L.
 Certificate not being worth the paper on which
 it is written. Again this listing purports
 to be in line with the I.C.R.U. listing of July
 which shows a total of 280 countries, but
 is very good friend of mine and is already claim-
 ing to be the W.I.A. list. I am not sure
 of the A.R.R.L. is 275 you see what I mean

A farcical situation arose for the 1955 V.K.ZL Contest which was run by the N.Z.A.R.T. and they stated the A.R.R.L. countries list would be used for scoring purposes, so we have the W.I.A. a party to a contest, which for scoring purposes, they do not recognise. What happens when the W.I.A. runs the contest; is the A.R.R.L. or the W.I.A. the recognised scoring list?

My reason for writing this letter is that I feel there is no room in the Amateur world for two awards, with similar characteristics and name, being granted by different Amateur organisations especially when they are as old as the W.I.A. and A.R.R.L. The A.R.R.L. started off the DXCC, so let them retain it as their award, having only one DXCC award irrespective of the sponsoring organisation.

As the WIA now finds it necessary or advisable to redesign the DXCC certificate itself, why not withdraw the Australian DXCC Award and start another award which will not be influenced by DXpeditions to uninhabited rocks, changes in politics or for any other reason? This would affect the future equipment needs of the award. This must not be too easy, but it will certainly remove the feeling of frustration of active Australian DXers in trying to assess their countries worked, submitting a QSL to the Australian Awards Committee, only to find it is not eligible for their

Should something logical and/or sensible come out of the Federal Executive submission to the I.A.R.U. for a standard assessment of what constitutes a "country" for DX scoring purposes, I cannot see where there can be room for two DXCC Awards. Has this thought been considered by FE?

My suggestion and recommendation is that F.E. themselves should put this subject on the agenda for the forthcoming Federal Convention. If you wish to get some additional angle on the subject, have a look at Alan Brown's (VICGX) article in March 1968 issue of "A.B."

[F.E. advise that the matter of DXCC countries list and the W.I.A. Certificate have been discussed by many Amateurs and the aforesaid matters will be listed for discussion at the forthcoming Convention.—Ed.]

1425 North Gibbs St.,
Pomona, California.

Editor "A.H." Dear Sir,

This is to wish you and the members of your fine organisation Season's Greetings from one who many years ago was a member. If you still have records prior to World War I, you may find me listed. At that time we met on Bourke St., Melbourne. I believe the place was called Oxford Chambers. It was on the left side, if you went up the street towards Queen's Hotel, Elizabeth Street, and I remember we used to buy our antenna wire from Warburton Frankl across the street.

I wonder how many of the members of that day and age are still around. Of course I was only a kid then. I enlisted at 17 while attending what was then the Melbourne Technical School (Junior).

I still hear from Jim Cunciff of Preston, although not for some time. Another I remember was Les Dredge of Preston and a Mr. Topping from Thornbury. As these chaps were older than I, quite possibly they have passed on. My first call was XOI. My call for receiving after W.W.I. was V-181.

I am still active in Radio, being Radio Officer on the U.S.S. "Gear ARS-34", a Navy vessel manned by civilians and operating in the salvage and rescue service. Do not get to work the Ham bands except on 75 metres, so not many contacts lately with the VKs.

Oh yes, I got my wireless training at the Amalgamated Wireless School in Melbourne, getting my commercial license in 1931. My Aussie address used to be "Glentworth," Yann Street, Preston, Victoria.

CITE 8. Pub. WILFMAN

I have read the letter written on the above subject by Ted Cawthron, VKAJE (Feb. "A.R.") and support his plea most wholeheartedly. It is most timely indeed, coming as it does at a time when VK is trying to retain ? Mic. "in a last ditch stand" so as to speak.

We must be frank, and admit that except during the R.D. Contest, the number of VK Amateurs to be heard on 7 Mc. (c.w. and phone) at any one time can be counted most times on one's pair of hands. (Remember that we have thousands of licensed Amateurs in this country.) Shameful isn't it?

For all of my 30 odd years' activity as an a.w.l., the lower of our frequency bands have been my favorites, with a very particular leaning towards 7 Mc., since we were granted its use. I have been in the position to carefully

—and regrettably—note the gradual drift away from "40", until this very day (4/2/59) when during a listen on the band between 1915z and 2115z, I heard some 30 Europeans, one mobile marine W8 near Bermuda and one solitary VK (VK2ARG).

If further evidence is required to confirm what VK3E is "trying to drive home" about activities, take a look at the calls listed under "A.R."—it pains me every time I hear it, because usually there are less than five reports listed (only one in Feb issue!), whereas 14 Mc. may contain up to 25/30 reports. Even 21 Mc. usually boasts more VK activity than 7 Mc.!

I ask you to again peruse the letter by VK-5VE in Feb. "A.R." and then, if you really want? I'm retained by VK as an Amateur band, "give it a go" yourself while there is still time. By so doing, you will help provide our Rep. (John Moyle) at the forthcoming ITU Conference with "bullets" which he can "fire" at those who seek to destroy what we already have—to wit, the use of "40" as a Ham band.

—Eric W. Trebilcock (BERS193, WIA-L3042)

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 Victoria—Dave Wardlaw, VK3ADW.
 Queensland—Arthur Wale, VK6AAW.
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 Western Australia—Ron Hunt, VK6KW.
 Tasmania—Don Fisher, VK7AB.
 Papua-New Guinea—Russ Callinan, VK3XK.
Fed. Contest Committee: Reg. Raley, VK3RR.
 Secretary: John L2MK, G.P.O., Adelaide, S.A.
QSL Bureau: B. J. Jones, VK3RZ, 23 Lamdale Street, Box Hill, E.I. Vic.
Awards Manager: A. G. Weynton, VK3XU, 3 York Street, Bonbeach, Vic.

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Central: Bob Adams, VK3HAW, 111 Hawkins, VK3YL, 38 Comfort Ave., Cessnock; Western: W. Sutt, VK3VHW, "Cambridge", Forbes; South Coast & Southern: E. Fisher, VK3G, 1 Orinda St., Warracrow; Sth. Western: J. W. Edge, VK3AJQ, Wallace St., Coolangub; Tamworth: B. Smith, VK3AP5, 66 Upper St., Tamworth.

VICTORIA

President: F. G. Ball, VK3YE.
Secretary: J. E. Lancaster, VK3JL.

FEDERAL

CHANGES OF ADDRESS OF LICENSEES

During the collection of donations to the I.U.T. Fund it has been noted that many licensees have apparently overlooked the Regulations requiring notification of change of address to the Postmaster-General's Department. Obviously some of these might have been received of late to tally with the collection of the Australian Radio Amateur Call Book, but in many instances this is not so. Just to refresh your mind on this, the following are the relevant Regulations. Attention to this will also ensure that the Call Book is right up-to-date at the time of printing each publication.

CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.

★

ROSS HULL MEMORIAL

Return at Legat: Postmarked not later than Sunday, 1st March, 1959.
 Legs from all late to tally with in Contest would be appreciated. Propagation data derived from Log is important.

NATIONAL FIELD DAY:

Comments on a change of date and on holding extra field days during the year would be appreciated.

A.R.R.L. DX CAMP, 1959:

Dates: February-March 5-8.
 C.W.—March 20-22.
 All Bands.

RUSSIAN PHONE CONTEST:

Dates: March 14 and 15.
 Rules: See page 13 this issue.

REMEMBER DAY CONTEST, 1959:

Dates: Saturday, 15th August to Sunday, 16th August, 1959.
 Duration: 1800 hrs. E.A.S.T. to 1750 hrs. E.S.T.: As for 1958.

OZ C.C.C.:

Dates: May 2-4.
 All Bands.

VK-2L DX CONTEST, 1959:

Dates: Dates—1000 GMT, Saturday, 2nd Oct. 1000 GMT, 4th Oct.
 C.W.—19th Oct.—11th Oct., 1959.

Administrative Secretary: Mrs. May, 418 Victoria Parade, East Melbourne, C.I. Postal address: P.O. Box 35, East Melbourne, C.I.
Meeting Night: First Wednesday of each month at the Radio School, Royal Melbourne Technical College.

Divisional Sub-Editor: W. M. Jones, VK3YE, 7 New St., Surrey Hills, E.M.O.

QSL Bureau: Inwards and Outwards—W.I.A., Vin. Div., P.O. Box 53, East Melbourne, C.I.
Zone Correspondents: Western: W. J. Kinisla, VK3JAK, Magdala, Lubeck, South Western: W. Wines, 48 Cranley St., Warrnambool, and W. Zimmer, VK3AWZ, 20 Skene St., Newtown; Far North Western: M. Folie, VK3GZ, 101 Lemon Ave., Mildura; Midlands: R. Jonsson, VK3ND, Parnworth St., Castlemaine; North Eastern: L. Elison, VK3ALE, 73 Orr St., Shepparton; Eastern: J. Spark, VK3AJK, 20 Marshall Ave., Moee.

QUEENSLAND

President: John Pickles, VK3PP.
Secretary: W. J. Rafter, VK3AP, Box 638J, G.P.O., Brisbane.

Meeting Night: Fourth Friday in each month at the State Service Union Rooms, Elizabeth Street, Brisbane.

Divisional Sub-Editor: A. Simpson, VK3ZAK, Cr. Baden Powell and White Sts., Everton Park.

QSL Bureau: Jack Fikes, VK3AF, Vanda St., Buranda.

29. An Amateur station licensee who intends to remove his station to a new address within the State must notify the Superintendent, Radio Branch, or the nearest District Radio Inspector in the State concerned, in writing, of the proposed change of address to the date of removal, so that the necessary authorisation may be issued.

30. Where a change of address is temporary, as in the case of a licensee visiting another district, or in any way changing his place of residence within the State for a short period, with the intention of returning to his original district, notification of removal to the date of address may be obtained on application to the Superintendent, Radio Branch, or District Inspector concerned.

31. In the case of an Amateur licensee being forced by circumstances beyond his control to vacate, at short notice, premises in which his station is housed, notification by telephone will be accepted, and verbal permission may be granted for the change of address, providing the station is followed up as early as practicable, by a written notification.

32. Any Amateur Station licensee who desires to remove his station to a new address beyond the borders of the State in which he is resident, whether permanently or temporarily, must make written application, for the necessary approval, to the Superintendent, Radio Branch, in the State in which his station is licensed for operation.

33. Authority for installation and operation of an Amateur Station at a new location, which is not the residence of the licensee, will not be granted unless the Department is satisfied that the station will not be accessible to unauthorized persons.

34. Any Amateur Station licensee changing his address must not operate his transmitting equipment at the new address before receiving the necessary approval. Transmissions conducted at unauthorized addresses are illegal and may result in the suspension or cancellation of the licence.

NEW SOUTH WALES

The January general and special general meetings were held at Science House, Gloucester St., Sydney, as usual on the 7th and owing to the much publicised Japanese fireworks display, many members were unable to get within parking distance. Due to late arrivals, the meeting had to commence at 7.45 p.m. did not get under way until around 8.40 p.m. However, eventually 53 arrived in drabs and drabs and both meetings were held successfully.

The special general meeting was held after the general monthly meeting, therefore allow-

Zone Correspondents: Maryborough, R. J. Glasgow, VK4BG, 80 North St., Maryborough, Townsville, R. K. Wilson, VK4RW, Hogan St., Stuart, Townsville.

SOUTH AUSTRALIA

President: B. W. Austin, VK3CA.
Secretary: J. C. Hasselberg, VK3BC, Box 1234K, G.P.O., Adelaide, Telephone 7831.
Meeting Night: Second Tuesday of each month at 17 Wymouth St., Adelaide.
Divisional Sub-Editor: E. C. Daw, VK3EF, P.O. Box 44, Gawler, S.A.
QSL Bureau: G. Luxton, VK3BX, 27 Belair Rd., West Mitcham, S.A. (Inwards & Outwards).

WESTERN AUSTRALIA

President: L. Hoeger, VK3HR.
Secretary: J. R. Elms, VK3BE, Box N1009, G.P.O., Perth.
Meeting Night: Third Tuesday of each month at Perth Tech College Annex, Mounts Bay Rd.
Divisional Sub-Editor: J. R. Elms, VK3BE, 20 Central Road, Hammonds.
QSL Bureau: Jim Rumble, VK3RU, Box 7719, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: P. E. L. Dunne, VK3PD.
Secretary: K. E. Millio, VK3CA, Box 3719, G.P.O., Hobart.
Meeting Night: First Wednesday of each month at W.I.A. Clubroom, 167 Liverpool St., Hobart.
Divisional Sub-Editor: W. W. Watson, VK3TY, 20 Lamar Road, Hobart.
QSL Bureau: J. Batcher, VK3JB, 30 Willowsdown Ave., Lower Sandy Bay, Hobart.
Zone Correspondents: North Western Zone—Terry Tong, Northern Zone—Ray Hobart.

PAPUA-NEW GUINEA

President: F. N. Nolan, VK3FN.
Secretary: G. A. Greville, WIA-L2004.
Divisional Sub-Editor: R. Clark, WIA-L2001, P.O. Box 824, Port Moresby.
QSL Bureau: D. S. Brown, VK3BS.

ing more time for discussions which were bound to arise, concentrated around the figures submitted in the November Bulletin. The discussions which took place centered around the general financial state of the Institute in N.S.W. and the figures submitted by Council. FOA DISCUSSION ONLY were severely criticised by some present. The general feeling among members present indicated that an increase in annual subscriptions would not be frowned on, and looking at a report from our Honorary Auditor, this seems most necessary to maintain the Institute's financial position and to enable members enjoy today.

A minority were sceptical as to the accuracy of some of the figures quoted in this month's Bulletin, and a motion was moved by Phil ZER "That Council form a committee to thoroughly investigate and report in detail how these figures were obtained." Council hope to have this report to submit to the members at the February meeting. From this detailed statement of income and expenditure we can see how much money per annum is required to finance the W.I.A. N.S.W. Division and whether a rise in annual sub. will be necessary for the satisfactory functioning of the Division.

The facilities made available to members were beyond our mind. During the very efficient services of our hard-working Secretary and the work done by the QSL officer, Frank KILPATRICK, in the preparation and dispatching record numbers of QSL cards in and out each month. The efficiency of VK3WJ, the Divisional Headquarters Station at Dural, in its Sunday Broadcasts to members and the W.I.C.E.N. activity are beyond reproach.

The Council wish to point out to members once again that there is no recommendation whatsoever for an increase in annual subscriptions, the figures quoted in our Bulletin were merely a basis for discussion.

Recently it was found necessary by one of the major Divisions of the Institute, owing to increased costs, etc., to substantially increase the annual subscriptions to members.

NINTH ANNUAL CONVENTION OF THE

NEW SOUTH WALES DIVISION

Approximately 300 Hams, XYLs, YLs, associated with the Division, arrived in Sydney on the grounds of 871, Dural, on the Saturday of Australia Day week-end. A marquee was erected on the grounds to house the customers. Last year it was two tents, next year probably two marquees will be needed. Knowing that the ZAGR was on his way, the official opening was delayed until 11.30 a.m. however after the Master of Ceremonies, Max ZMP, introduced our Divisional President,

Pierce 8APQ. The aforesaid Pierce welcomed all and sundry and then asked the highly paid engineer of 2WI, Dave 8FO, to expound the merits of his theories of the importance of 2WI. However, this was rather superfluous as the set-up is on view for all to see and too much cannot be said in giving credit where it is due. It is the painstaking, honest, mental and physical, that Dave has put into the station. The last time the writer was there for the 2WI, the station was in the corner is still there, but if the ATR was about, it was lost amidst the rest of the gear.

John J. 2W, a Special Observer and I.T.U. to the Government, was next. He said I.T.U. was next on the list. You all know John, his knowledge and capabilities, so even those who are not too stupid to be taken in by his stubborn to give a few bob to the I.T.U. Fund, realise that there could be none better fitted for the job.

Running behind in time, the lecturers of the lectures were warned to be briefer than brief—a shame as all were interesting and far too short. Joe 2R, orbited with his spunklets both verbally and diagrammatically. Jack 2ADN told of his experiences of Amateur Radio in the War. Bill 2ZL, who had been taken to a Lions convention, pertinent points were VK laxity in sending QSL cards to them; luxury setting of the shack and giving QRX as we never experience. Jack gave a personal recommendation to Council to inquire into the possibility of Amateurs having their call signs and numbers printed on their licence. This suggestion is persevered with, as have always thought it an excellent idea. Even tried to obtain QRX from the ATR, advised that there was no QX in their alphabet.

Max 2ARZ was on borrowed time telling us how to work with sheet metal, so hope we hear more from him in a later edition. IACH gave details of electronic relay switches. Understand that Bill 2ZL was to give a demonstration on how to construct a QSL in 10 seconds, but time was up. The ballot recorded a win to Joe, but it was hard to determine if he won because he talked the longest, or he was more honest. Alan 2W, who gave the female section. Anyway the best man won, so congrats, Joseph.

The display of Amateur built equipment was on display and the following gave a brief description of their wares: Dave Evans from Gundah, with his 2W, 2R, 2S, 2T, 2U, 2V, 2W, 2X, 2Y, 2Z, 2AA, 2AB, 2AC, 2AD, 2AE, 2AF, 2AG, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AN, 2AO, 2AP, 2AQ, 2AR, 2AS, 2AT, 2AU, 2AV, 2AW, 2AX, 2AY, 2AZ, 2BA, 2BB, 2BC, 2BD, 2BE, 2BF, 2BG, 2BH, 2BI, 2BJ, 2BK, 2BL, 2BM, 2BN, 2BO, 2BP, 2BQ, 2BR, 2BS, 2BT, 2BU, 2BV, 2BW, 2BX, 2BY, 2BZ, 2CA, 2CB, 2CC, 2CD, 2CE, 2CF, 2CG, 2CH, 2CI, 2CJ, 2CK, 2CL, 2CM, 2CN, 2CO, 2CP, 2CQ, 2CR, 2CS, 2CT, 2CU, 2CV, 2CW, 2CX, 2CY, 2CZ, 2DA, 2DB, 2DC, 2DD, 2DE, 2DF, 2DG, 2DH, 2DI, 2DJ, 2DK, 2DL, 2DM, 2DN, 2DO, 2DP, 2DQ, 2DR, 2DS, 2DT, 2DU, 2DV, 2DW, 2DX, 2DY, 2DZ, 2EA, 2EB, 2EC, 2ED, 2EE, 2EF, 2EG, 2EH, 2EI, 2EJ, 2EK, 2EL, 2EM, 2EN, 2EO, 2EP, 2EQ, 2ER, 2ES, 2ET, 2EU, 2EV, 2EW, 2EX, 2EY, 2EZ, 2FA, 2FB, 2FC, 2FD, 2FE, 2FF, 2FG, 2FH, 2FI, 2FJ, 2FK, 2FL, 2FM, 2FN, 2FO, 2FP, 2FQ, 2FR, 2FS, 2FT, 2FU, 2FV, 2FW, 2FX, 2FY, 2FZ, 2GA, 2GB, 2GC, 2GD, 2GE, 2GF, 2GG, 2GH, 2GI, 2GJ, 2GK, 2GL, 2GM, 2GN, 2GO, 2GP, 2GQ, 2GR, 2GS, 2GT, 2GU, 2GV, 2GW, 2GX, 2GY, 2GZ, 2HA, 2HB, 2HC, 2HD, 2HE, 2HF, 2HG, 2HH, 2HI, 2HJ, 2HK, 2HL, 2HM, 2HN, 2HO, 2HP, 2HQ, 2HR, 2HS, 2HT, 2HU, 2HV, 2HW, 2HX, 2HY, 2HZ, 2IA, 2IB, 2IC, 2ID, 2IE, 2IF, 2IG, 2IH, 2II, 2IJ, 2IK, 2IL, 2IM, 2IN, 2IO, 2IP, 2IQ, 2IR, 2IS, 2IT, 2IU, 2IV, 2IW, 2IX, 2IY, 2IZ, 2JA, 2JB, 2JC, 2JD, 2JE, 2JF, 2JG, 2JH, 2JI, 2JJ, 2JK, 2JL, 2JM, 2JN, 2JO, 2JP, 2JQ, 2JR, 2JS, 2JT, 2JU, 2JV, 2JW, 2JX, 2JY, 2JZ, 2KA, 2KB, 2KC, 2KD, 2KE, 2KF, 2KG, 2KH, 2KI, 2KJ, 2KK, 2KL, 2KM, 2KN, 2KO, 2KP, 2KQ, 2KR, 2KS, 2KT, 2KU, 2KV, 2KW, 2KX, 2KY, 2KZ, 2LA, 2LB, 2LC, 2LD, 2LE, 2LF, 2LG, 2LH, 2LI, 2LJ, 2LK, 2LL, 2LM, 2LN, 2LO, 2LP, 2LQ, 2LR, 2LS, 2LT, 2LU, 2LV, 2LW, 2LX, 2LY, 2LZ, 2MA, 2MB, 2MC, 2MD, 2ME, 2MF, 2MG, 2MH, 2MI, 2MJ, 2MK, 2ML, 2MM, 2MN, 2MO, 2MP, 2MQ, 2MR, 2MS, 2MT, 2MU, 2MV, 2MW, 2MX, 2MY, 2MZ, 2NA, 2NB, 2NC, 2ND, 2NE, 2NF, 2NG, 2NH, 2NI, 2NJ, 2NK, 2NL, 2NM, 2NN, 2NO, 2NP, 2NQ, 2NR, 2NS, 2NT, 2NU, 2NV, 2NW, 2NX, 2NY, 2NZ, 2OA, 2OB, 2OC, 2OD, 2OE, 2OF, 2OG, 2OH, 2OI, 2OJ, 2OK, 2OL, 2OM, 2ON, 2OO, 2OP, 2OQ, 2OR, 2OS, 2OT, 2OU, 2OV, 2OW, 2OX, 2OY, 2OZ, 2PA, 2PB, 2PC, 2PD, 2PE, 2PF, 2PG, 2PH, 2PI, 2PJ, 2PK, 2PL, 2PM, 2PN, 2PO, 2PP, 2PQ, 2PR, 2PS, 2PT, 2PU, 2PV, 2PW, 2PX, 2PY, 2PZ, 2QA, 2QB, 2QC, 2QD, 2QE, 2QF, 2QG, 2QH, 2QI, 2QJ, 2QK, 2QL, 2QM, 2QN, 2QO, 2QP, 2QQ, 2QR, 2QS, 2QT, 2QU, 2QV, 2QW, 2QX, 2QY, 2QZ, 2RA, 2RB, 2RC, 2RD, 2RE, 2RF, 2RG, 2RH, 2RI, 2RJ, 2RK, 2RL, 2RM, 2RN, 2RO, 2RP, 2RQ, 2RR, 2RS, 2RT, 2RU, 2RV, 2RW, 2RX, 2RY, 2RZ, 2SA, 2SB, 2SC, 2SD, 2SE, 2SF, 2SG, 2SH, 2SI, 2SJ, 2SK, 2SL, 2SM, 2SN, 2SO, 2SP, 2SQ, 2SR, 2SS, 2ST, 2SU, 2SV, 2SW, 2SX, 2SY, 2SZ, 2TA, 2TB, 2TC, 2TD, 2TE, 2TF, 2TG, 2TH, 2TI, 2TJ, 2TK, 2TL, 2TM, 2TN, 2TO, 2TP, 2TQ, 2TR, 2TS, 2TT, 2TU, 2TV, 2TW, 2TX, 2TY, 2TZ, 2UA, 2UB, 2UC, 2UD, 2UE, 2UF, 2UG, 2UH, 2UI, 2UJ, 2UK, 2UL, 2UM, 2UN, 2UO, 2UP, 2UQ, 2UR, 2US, 2UT, 2UU, 2UV, 2UW, 2UX, 2UY, 2UZ, 2VA, 2VB, 2VC, 2VD, 2VE, 2VF, 2VG, 2VH, 2VI, 2VJ, 2VK, 2VL, 2VM, 2VN, 2VO, 2VP, 2VQ, 2VR, 2VS, 2VT, 2VU, 2VV, 2VW, 2VX, 2VY, 2VZ, 2WA, 2WB, 2WC, 2WD, 2WE, 2WF, 2WG, 2WH, 2WI, 2WJ, 2WK, 2WL, 2WM, 2WN, 2WO, 2WP, 2WQ, 2WR, 2WS, 2WT, 2WU, 2WV, 2WW, 2WX, 2WY, 2WZ, 2XA, 2XB, 2XC, 2XD, 2XE, 2XF, 2XG, 2XH, 2XI, 2XJ, 2XK, 2XL, 2XM, 2XN, 2XO, 2XP, 2XQ, 2XR, 2XS, 2XT, 2XU, 2XV, 2XW, 2XX, 2XY, 2XZ, 2YA, 2YB, 2YC, 2YD, 2YE, 2YF, 2YG, 2YH, 2YI, 2YJ, 2YK, 2YL, 2YM, 2YN, 2YO, 2YP, 2YQ, 2YR, 2YS, 2YT, 2YU, 2YV, 2YW, 2YX, 2YY, 2YZ, 2ZA, 2ZB, 2ZC, 2ZD, 2ZE, 2ZF, 2ZG, 2ZH, 2ZI, 2ZJ, 2ZK, 2ZL, 2ZM, 2ZN, 2ZO, 2ZP, 2ZQ, 2ZR, 2ZS, 2ZT, 2ZU, 2ZV, 2ZW, 2ZX, 2ZY, 2ZZ, 2AA, 2AB, 2AC, 2AD, 2AE, 2AF, 2AG, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AN, 2AO, 2AP, 2AQ, 2AR, 2AS, 2AT, 2AU, 2AV, 2AW, 2AX, 2AY, 2AZ, 2BA, 2BB, 2BC, 2BD, 2BE, 2BF, 2BG, 2BH, 2BI, 2BJ, 2BK, 2BL, 2BM, 2BN, 2BO, 2BP, 2BQ, 2BR, 2BS, 2BT, 2BU, 2BV, 2BW, 2BX, 2BY, 2BZ, 2CA, 2CB, 2CC, 2CD, 2CE, 2CF, 2CG, 2CH, 2CI, 2CJ, 2CK, 2CL, 2CM, 2CN, 2CO, 2CP, 2CQ, 2CR, 2CS, 2CT, 2CU, 2CV, 2CW, 2CX, 2CY, 2CZ, 2DA, 2DB, 2DC, 2DD, 2DE, 2DF, 2DG, 2DH, 2DI, 2DJ, 2DK, 2DL, 2DM, 2DN, 2DO, 2DP, 2DQ, 2DR, 2DS, 2DT, 2DU, 2DV, 2DW, 2DX, 2DY, 2DZ, 2EA, 2EB, 2EC, 2ED, 2EE, 2EF, 2EG, 2EH, 2EI, 2EJ, 2EK, 2EL, 2EM, 2EN, 2EO, 2EP, 2EQ, 2ER, 2ES, 2ET, 2EU, 2EV, 2EW, 2EX, 2EY, 2EZ, 2FA, 2FB, 2FC, 2FD, 2FE, 2FF, 2FG, 2FH, 2FI, 2FJ, 2FK, 2FL, 2FM, 2FN, 2FO, 2FP, 2FQ, 2FR, 2FS, 2FT, 2FU, 2FV, 2FW, 2FX, 2FY, 2FZ, 2GA, 2GB, 2GC, 2GD, 2GE, 2GF, 2GG, 2GH, 2GI, 2GJ, 2GK, 2GL, 2GM, 2GN, 2GO, 2GP, 2GQ, 2GR, 2GS, 2GT, 2GU, 2GV, 2GW, 2GX, 2GY, 2GZ, 2HA, 2HB, 2HC, 2HD, 2HE, 2HF, 2HG, 2HH, 2HI, 2HJ, 2HK, 2HL, 2HM, 2HN, 2HO, 2HP, 2HQ, 2HR, 2HS, 2HT, 2HU, 2HV, 2HW, 2HX, 2HY, 2HZ, 2IA, 2IB, 2IC, 2ID, 2IE, 2IF, 2IG, 2IH, 2II, 2IJ, 2IK, 2IL, 2IM, 2IN, 2IO, 2IP, 2IQ, 2IR, 2IS, 2IT, 2IU, 2IV, 2IW, 2IX, 2IY, 2IZ, 2JA, 2JB, 2JC, 2JD, 2JE, 2JF, 2JG, 2JH, 2JI, 2JJ, 2JK, 2JL, 2JM, 2JN, 2JO, 2JP, 2JQ, 2JR, 2JS, 2JT, 2JU, 2JV, 2JW, 2JX, 2JY, 2JZ, 2KA, 2KB, 2KC, 2KD, 2KE, 2KF, 2KG, 2KH, 2KI, 2KJ, 2KK, 2KL, 2KM, 2KN, 2KO, 2KP, 2KQ, 2KR, 2KS, 2KT, 2KU, 2KV, 2KW, 2KX, 2KY, 2KZ, 2LA, 2LB, 2LC, 2LD, 2LE, 2LF, 2LG, 2LH, 2LI, 2LJ, 2LK, 2LM, 2LN, 2LO, 2LP, 2LQ, 2LR, 2LS, 2LT, 2LU, 2LV, 2LW, 2LX, 2LY, 2LZ, 2MA, 2MB, 2MC, 2MD, 2ME, 2MF, 2MG, 2MH, 2MI, 2MJ, 2MK, 2ML, 2MM, 2MN, 2MO, 2MP, 2MQ, 2MR, 2MS, 2MT, 2MU, 2MV, 2MW, 2MX, 2MY, 2MZ, 2NA, 2NB, 2NC, 2ND, 2NE, 2NF, 2NG, 2NH, 2NI, 2NJ, 2NK, 2NL, 2NM, 2NN, 2NO, 2NP, 2NQ, 2NR, 2NS, 2NT, 2NU, 2NV, 2NW, 2NX, 2NY, 2NZ, 2OA, 2OB, 2OC, 2OD, 2OE, 2OF, 2OG, 2OH, 2OI, 2OJ, 2OK, 2OL, 2OM, 2ON, 2OO, 2OP, 2OQ, 2OR, 2OS, 2OT, 2OU, 2OV, 2OW, 2OX, 2OY, 2OZ, 2PA, 2PB, 2PC, 2PD, 2PE, 2PF, 2PG, 2PH, 2PI, 2PJ, 2PK, 2PL, 2PM, 2PN, 2PO, 2PP, 2PQ, 2PR, 2PS, 2PT, 2PU, 2PV, 2PW, 2PX, 2PY, 2PZ, 2QA, 2QB, 2QC, 2QD, 2QE, 2QF, 2QG, 2QH, 2QI, 2QJ, 2QK, 2QL, 2QM, 2QN, 2QO, 2QP, 2QQ, 2QR, 2QS, 2QT, 2QU, 2QV, 2QW, 2QX, 2QY, 2QZ, 2RA, 2RB, 2RC, 2RD, 2RE, 2RF, 2RG, 2RH, 2RI, 2RJ, 2RK, 2RL, 2RM, 2RN, 2RO, 2RP, 2RQ, 2RR, 2RS, 2RT, 2RU, 2RV, 2RW, 2RX, 2RY, 2RZ, 2SA, 2SB, 2SC, 2SD, 2SE, 2SF, 2SG, 2SH, 2SI, 2SJ, 2SK, 2SL, 2SM, 2SN, 2SO, 2SP, 2SQ, 2SR, 2SS, 2ST, 2SU, 2SV, 2SW, 2SX, 2SY, 2SZ, 2TA, 2TB, 2TC, 2TD, 2TE, 2TF, 2TG, 2TH, 2TI, 2TJ, 2TK, 2TL, 2TM, 2TN, 2TO, 2TP, 2TQ, 2TR, 2TS, 2TT, 2TU, 2TV, 2TW, 2TX, 2TY, 2TZ, 2UA, 2UB, 2UC, 2UD, 2UE, 2UF, 2UG, 2UH, 2UI, 2UJ, 2UK, 2UL, 2UM, 2UN, 2UO, 2UP, 2UQ, 2UR, 2US, 2UT, 2UU, 2UV, 2UW, 2UX, 2UY, 2UZ, 2VA, 2VB, 2VC, 2VD, 2VE, 2VF, 2VG, 2VH, 2VI, 2VJ, 2VK, 2VL, 2VM, 2VN, 2VO, 2VP, 2VQ, 2VR, 2VS, 2VT, 2VU, 2VV, 2VW, 2VX, 2VY, 2VZ, 2WA, 2WB, 2WC, 2WD, 2WE, 2WF, 2WG, 2WH, 2WI, 2WJ, 2WK, 2WL, 2WM, 2WN, 2WO, 2WP, 2WQ, 2WR, 2WS, 2WT, 2WU, 2WV, 2WW, 2WX, 2WY, 2WZ, 2XA, 2XB, 2XC, 2XD, 2XE, 2XF, 2XG, 2XH, 2XI, 2XJ, 2XK, 2XL, 2XM, 2XN, 2XO, 2XP, 2XQ, 2XR, 2XS, 2XT, 2XU, 2XV, 2XW, 2XX, 2XY, 2XZ, 2YA, 2YB, 2YC, 2YD, 2YE, 2YF, 2YG, 2YH, 2YI, 2YJ, 2YK, 2YL, 2YM, 2YN, 2YO, 2YP, 2YQ, 2YR, 2YS, 2YT, 2YU, 2YV, 2YW, 2YX, 2YY, 2YZ, 2ZA, 2ZB, 2ZC, 2ZD, 2ZE, 2ZF, 2ZG, 2ZH, 2ZI, 2ZJ, 2ZK, 2ZL, 2ZM, 2ZN, 2ZO, 2ZP, 2ZQ, 2ZR, 2ZS, 2ZT, 2ZU, 2ZV, 2ZW, 2ZX, 2ZY, 2ZZ, 2AA, 2AB, 2AC, 2AD, 2AE, 2AF, 2AG, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AN, 2AO, 2AP, 2AQ, 2AR, 2AS, 2AT, 2AU, 2AV, 2AW, 2AX, 2AY, 2AZ, 2BA, 2BB, 2BC, 2BD, 2BE, 2BF, 2BG, 2BH, 2BI, 2BJ, 2BK, 2BL, 2BM, 2BN, 2BO, 2BP, 2BQ, 2BR, 2BS, 2BT, 2BU, 2BV, 2BW, 2BX, 2BY, 2BZ, 2CA, 2CB, 2CC, 2CD, 2CE, 2CF, 2CG, 2CH, 2CI, 2CJ, 2CK, 2CL, 2CM, 2CN, 2CO, 2CP, 2CQ, 2CR, 2CS, 2CT, 2CU, 2CV, 2CW, 2CX, 2CY, 2CZ, 2DA, 2DB, 2DC, 2DD, 2DE, 2DF, 2DG, 2DH, 2DI, 2DJ, 2DK, 2DL, 2DM, 2DN, 2DO, 2DP, 2DQ, 2DR, 2DS, 2DT, 2DU, 2DV, 2DW, 2DX, 2DY, 2DZ, 2EA, 2EB, 2EC, 2ED, 2EE, 2EF, 2EG, 2EH, 2EI, 2EJ, 2EK, 2EL, 2EM, 2EN, 2EO, 2EP, 2EQ, 2ER, 2ES, 2ET, 2EU, 2EV, 2EW, 2EX, 2EY, 2EZ, 2FA, 2FB, 2FC, 2FD, 2FE, 2FF, 2FG, 2FH, 2FI, 2FJ, 2FK, 2FL, 2FM, 2FN, 2FO, 2FP, 2FQ, 2FR, 2FS, 2FT, 2FU, 2FV, 2FW, 2FX, 2FY, 2FZ, 2GA, 2GB, 2GC, 2GD, 2GE, 2GF, 2GG, 2GH, 2GI, 2GJ, 2GK, 2GL, 2GM, 2GN, 2GO, 2GP, 2GQ, 2GR, 2GS, 2GT, 2GU, 2GV, 2GW, 2GX, 2GY, 2GZ, 2HA, 2HB, 2HC, 2HD, 2HE, 2HF, 2HG, 2HH, 2HI, 2HJ, 2HK, 2HL, 2HM, 2HN, 2HO, 2HP, 2HQ, 2HR, 2HS, 2HT, 2HU, 2HV, 2HW, 2HX, 2HY, 2HZ, 2IA, 2IB, 2IC, 2ID, 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2PX, 2PY, 2PZ, 2QA, 2QB, 2QC, 2QD, 2QE, 2QF, 2QG, 2QH, 2QI, 2QJ, 2QK, 2QL, 2QM, 2QN, 2QO, 2QP, 2QQ, 2QR, 2QS, 2QT, 2QU, 2QV, 2QW, 2QX, 2QY, 2QZ, 2RA, 2RB, 2RC, 2RD, 2RE, 2RF, 2RG, 2RH, 2RI, 2RJ, 2RK, 2RL, 2RM, 2RN, 2RO, 2RP, 2RQ, 2RR, 2RS, 2RT, 2RU, 2RV, 2RW, 2RX, 2RY, 2RZ, 2SA, 2SB, 2SC, 2SD, 2SE, 2SF, 2SG, 2SH, 2SI, 2SJ, 2SK, 2SL, 2SM, 2SN, 2SO, 2SP, 2SQ, 2SR, 2SS, 2ST, 2SU, 2SV, 2SW, 2SX, 2SY, 2SZ, 2TA, 2TB, 2TC, 2TD, 2TE, 2TF, 2TG, 2TH, 2TI, 2TJ, 2TK, 2TL, 2TM, 2TN, 2TO, 2TP, 2TQ, 2TR, 2TS, 2TT, 2TU, 2TV, 2TW, 2TX, 2TY, 2TZ, 2UA, 2UB, 2UC, 2UD, 2UE, 2UF, 2UG, 2UH, 2UI, 2UJ, 2UK, 2UL, 2UM, 2UN, 2UO, 2UP, 2UQ, 2UR, 2US, 2UT, 2UU, 2UV, 2UW, 2UX, 2UY, 2UZ, 2VA, 2VB, 2VC, 2VD, 2VE, 2VF, 2VG, 2VH, 2VI, 2VJ, 2VK, 2VL, 2VM, 2VN, 2VO, 2VP, 2VQ, 2VR, 2VS, 2VT, 2VU, 2VV, 2VW, 2VX, 2VY, 2VZ, 2WA, 2WB, 2WC, 2WD, 2WE, 2WF, 2WG, 2WH, 2WI, 2WJ, 2WK, 2WL, 2WM, 2WN, 2WO, 2WP, 2WQ, 2WR, 2WS, 2WT, 2WU, 2WV, 2WW, 2WX, 2WY, 2WZ, 2XA, 2XB, 2XC, 2XD, 2XE, 2XF, 2XG, 2XH, 2XI, 2XJ, 2XK, 2XL, 2XM, 2XN, 2XO, 2XP, 2XQ, 2XR, 2XS, 2XT, 2XU, 2XV, 2XW, 2XX, 2XY, 2XZ, 2YA, 2YB, 2YC, 2YD, 2YE, 2YF, 2YG, 2YH, 2YI, 2YJ, 2YK, 2YL, 2YM, 2YN, 2YO, 2YP, 2YQ, 2YR, 2YS, 2YT, 2YU, 2YV, 2YW, 2YX, 2YY, 2YZ, 2ZA, 2ZB, 2ZC, 2ZD, 2ZE, 2ZF, 2ZG, 2ZH, 2ZI, 2ZJ, 2ZK, 2ZL, 2ZM, 2ZN, 2ZO, 2ZP, 2ZQ, 2ZR, 2ZS, 2ZT, 2ZU, 2ZV, 2ZW, 2ZX, 2ZY, 2ZZ, 2AA, 2AB, 2AC, 2AD, 2AE, 2AF, 2AG, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AN, 2AO, 2AP, 2AQ, 2AR, 2AS, 2AT, 2AU, 2AV, 2AW, 2AX, 2AY, 2AZ, 2BA, 2BB, 2BC, 2BD, 2BE, 2BF, 2BG, 2BH, 2BI, 2BJ, 2BK, 2BL, 2BM, 2BN, 2BO, 2BP, 2BQ, 2BR, 2BS, 2BT, 2BU, 2BV, 2BW, 2BX, 2BY, 2BZ, 2CA, 2CB, 2CC, 2CD, 2CE, 2CF, 2CG, 2CH, 2CI, 2CJ, 2CK, 2CL, 2CM, 2CN, 2CO, 2CP, 2CQ, 2CR, 2CS, 2CT, 2CU, 2CV, 2CW, 2CX, 2CY, 2CZ, 2DA, 2DB, 2DC, 2DD, 2DE, 2DF, 2DG, 2DH, 2DI, 2DJ, 2DK, 2DL, 2DM, 2DN, 2DO, 2DP, 2DQ, 2DR, 2DS, 2DT, 2DU, 2DV, 2DW, 2DX, 2DY, 2DZ, 2EA, 2EB, 2EC, 2ED, 2EE, 2EF, 2EG, 2EH, 2EI, 2EJ, 2EK, 2EL, 2EM, 2EN, 2EO, 2EP, 2EQ, 2ER, 2ES, 2ET, 2EU, 2EV, 2EW, 2EX, 2EY, 2EZ, 2FA, 2FB, 2FC, 2FD, 2FE, 2FF, 2FG, 2FH, 2FI, 2FJ, 2FK, 2FL, 2FM, 2FN, 2FO, 2FP, 2FQ, 2FR, 2FS, 2FT, 2FU, 2FV, 2FW, 2FX, 2FY, 2FZ, 2GA, 2GB, 2GC, 2GD, 2GE, 2GF, 2GG, 2GH, 2GI, 2GJ, 2GK, 2GL, 2GM, 2GN, 2GO, 2GP, 2GQ, 2GR, 2GS, 2GT, 2GU, 2GV, 2GW, 2GX, 2GY, 2GZ, 2HA, 2HB, 2HC, 2HD, 2HE, 2HF, 2HG, 2HH, 2HI, 2HJ, 2HK, 2HL, 2HM, 2HN, 2HO, 2HP, 2HQ, 2HR, 2HS, 2HT, 2HU, 2HV, 2HW, 2HX, 2HY, 2HZ, 2IA, 2IB, 2IC, 2ID, 2IE, 2IF, 2IG, 2IH, 2II, 2IJ, 2IK, 2IL, 2IM, 2IN, 2IO, 2IP, 2IQ, 2IR, 2IS, 2IT, 2IU, 2IV, 2IW, 2IX, 2IY, 2IZ, 2JA, 2JB, 2JC, 2JD, 2JE, 2JF, 2JG, 2JH, 2JI, 2JJ, 2JK, 2JL, 2JM, 2JN, 2JO, 2JP, 2JQ, 2JR, 2JS, 2JT, 2JU, 2JV, 2JW, 2JX, 2JY, 2JZ, 2KA, 2KB, 2KC, 2KD, 2KE, 2KF, 2KG, 2KH, 2KI, 2KJ, 2KK, 2KL, 2KM, 2KN, 2KO, 2KP, 2KQ, 2KR, 2KS, 2KT, 2KU, 2KV, 2KW, 2KX, 2KY, 2KZ, 2LA, 2LB, 2LC, 2LD, 2LE, 2LF, 2LG, 2LH, 2LI, 2LJ, 2LK, 2LM, 2LN, 2LO, 2LP, 2LQ, 2LR, 2LS, 2LT, 2LU, 2LV, 2LW, 2LX, 2LY, 2LZ, 2MA, 2MB, 2MC, 2MD, 2ME, 2MF, 2MG, 2MH, 2MI, 2MJ, 2MK, 2ML, 2MM, 2MN, 2MO, 2MP, 2MQ, 2MR, 2MS, 2MT, 2MU, 2MV, 2MW, 2MX, 2MY, 2MZ, 2NA, 2NB, 2NC, 2ND, 2NE, 2NF, 2NG, 2NH, 2NI, 2NJ, 2NK, 2NL, 2NM, 2NN, 2NO, 2NP, 2NQ, 2NR, 2NS, 2NT, 2NU, 2NV, 2NW, 2NX, 2NY, 2NZ, 2OA, 2OB, 2OC, 2OD, 2OE, 2OF, 2OG, 2OH, 2OI, 2OJ, 2OK, 2OL, 2OM, 2ON, 2OO, 2OP, 2OQ, 2OR, 2OS, 2OT, 2OU, 2OV, 2OW, 2OX, 2OY, 2OZ, 2PA, 2PB, 2PC, 2PD, 2PE, 2PF, 2PG, 2PH, 2PI, 2PJ, 2PK, 2PL, 2PM, 2PN, 2PO, 2PP, 2PQ, 2PR, 2PS, 2PT, 2PU, 2PV, 2PW, 2PX, 2PY, 2PZ, 2QA, 2QB, 2QC, 2QD, 2QE, 2QF, 2QG, 2QH, 2QI, 2QJ, 2QK, 2QL, 2QM, 2QN, 2QO, 2QP, 2QQ, 2QR, 2QS, 2QT, 2QU, 2QV, 2QW, 2QX, 2QY, 2QZ, 2RA, 2RB, 2RC, 2RD, 2RE, 2RF, 2RG, 2RH, 2RI, 2RJ, 2RK, 2RL, 2RM, 2RN, 2RO, 2RP, 2RQ, 2RR, 2RS, 2RT, 2RU, 2RV, 2RW, 2RX, 2RY, 2RZ, 2SA, 2SB, 2SC, 2SD, 2SE, 2SF, 2SG, 2SH, 2SI, 2SJ, 2SK, 2SL, 2SM, 2SN, 2SO, 2SP, 2SQ, 2SR, 2SS, 2ST, 2SU, 2SV, 2SW, 2SX, 2SY, 2SZ, 2TA, 2TB, 2TC, 2TD, 2TE, 2TF, 2TG, 2TH, 2TI, 2TJ, 2TK, 2TL, 2TM, 2TN, 2TO, 2TP, 2TQ, 2TR, 2TS, 2TT, 2TU, 2TV, 2TW, 2TX, 2TY, 2TZ, 2UA, 2UB, 2UC, 2UD, 2UE, 2UF, 2UG, 2UH, 2UI, 2UJ, 2UK, 2UL, 2UM, 2UN, 2UO, 2UP, 2UQ, 2UR, 2US, 2UT, 2UU, 2UV, 2UW, 2UX, 2UY, 2UZ, 2VA, 2VB, 2VC, 2VD, 2VE, 2VF, 2VG, 2VH, 2VI, 2VJ, 2VK, 2VL, 2VM, 2VN, 2VO, 2VP, 2VQ, 2VR, 2VS, 2VT, 2VU, 2VV, 2VW, 2VX, 2VY, 2VZ, 2WA, 2WB, 2WC, 2WD, 2WE, 2WF, 2WG, 2WH, 2WI, 2WJ, 2WK, 2WL, 2WM, 2WN, 2WO, 2WP, 2WQ, 2WR, 2WS, 2WT, 2WU, 2WV, 2WW, 2WX, 2WY, 2WZ, 2XA, 2XB, 2XC, 2XD, 2XE, 2XF, 2XG, 2XH, 2XI, 2XJ, 2XK, 2XL, 2XM, 2XN, 2XO, 2XP, 2XQ, 2XR, 2XS, 2XT, 2XU, 2XV, 2XW, 2XX, 2XY, 2XZ, 2YA, 2YB, 2YC, 2YD, 2YE, 2YF, 2YG, 2YH, 2YI, 2YJ, 2YK, 2YL, 2YM, 2YN, 2YO, 2YP, 2YQ, 2YR, 2YS, 2YT, 2YU, 2YV, 2YW, 2YX, 2YY, 2YZ, 2ZA, 2ZB, 2ZC, 2ZD, 2ZE, 2ZF, 2ZG, 2ZH, 2ZI, 2ZJ, 2ZK, 2ZL, 2ZM, 2ZN, 2ZO, 2ZP, 2ZQ, 2ZR, 2ZS, 2ZT, 2ZU, 2ZV, 2ZW, 2ZX, 2ZY, 2ZZ, 2AA, 2AB, 2AC, 2AD, 2AE, 2AF, 2AG, 2AH, 2AI, 2AJ, 2AK, 2AL, 2AM, 2AN, 2AO, 2AP, 2AQ, 2AR, 2AS, 2AT, 2AU, 2AV, 2AW, 2AX, 2AY, 2AZ, 2BA, 2BB, 2BC, 2BD, 2BE, 2BF, 2BG, 2BH, 2BI, 2BJ, 2BK, 2BL, 2BM, 2BN, 2BO, 2BP, 2BQ, 2BR, 2BS, 2BT, 2BU, 2BV, 2BW, 2BX, 2BY, 2BZ, 2CA, 2CB, 2CC, 2CD, 2CE, 2CF, 2CG, 2CH, 2CI, 2CJ, 2CK, 2CL, 2CM, 2CN, 2CO, 2CP, 2CQ, 2CR, 2CS, 2CT, 2CU, 2CV, 2CW, 2CX, 2CY, 2CZ, 2DA, 2DB, 2DC, 2DD, 2DE, 2DF, 2DG, 2DH, 2DI, 2DJ, 2DK, 2DL, 2DM

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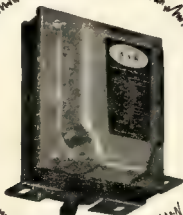
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fact quite a few DX chaps on 30 now start up with "Do you know Bram?"

Once again the field day coincided with appalling conditions for mobile or portable operation, not only was it hot but it was hot, but conditions on the bands at their lowest with auroral flutter to add to the troubles. This is the third year in a row that this has happened and it suggests that the chances of date is made to a time when general conditions are likely to be better, it looks like they will be but I will have to wait and perhaps go from our calendar from lack of interest.

During one part of the day it was noticed that one station was heard long, and fairly broad too, testing, testing, testing, right in the portion of the 40 metre band where a number of much lower powered portables were hopefully calling CQ. Not good operating practice, that read the Handbook sometime, it may help.

Borry to learn that Jim Sullivan had to withdraw nomination for Council this time as a result of health. It is recalled that Jim is largely responsible for the acceptance of W.T.C.E.N. in this State, he did a lot of spade work in the formation days and followed it through to the present day. As a result of that it is established, he cannot carry on. Bad luck, Jim, health comes first, we all realise that, but what a miss you, but hope a little quieter off duty now.

There have been a few enquiries regarding the receipts for their membership subs. Don't panic, our Treasurer is working on them and figures one postage will send you the receipt and the membership card; the latter must be printed out after the Treasurer's meeting determines the officers, etc., so you will get an envelope from him after that.

Call Books no longer available from the Division but can be obtained from the Publication Committee, Melbourne. You will find the address on the Editorial page of this issue. The fact that some chap has been using a part v.h.t. type myself have been in the swim of the Ross Hull, and if nothing else did a lot of listening on. Please don't mind me, I am a thing of the d.c. bands, please excuse. Another thing is that I've been fighting a war of the dials Pansy left me which has taken me some time to do.

Don't forget though, and will repeat here, even though Nell will most likely put it in the next issue, that you should be sending in your Ross Hull logs, no matter if you are a possible winner or, like me, way down, make it out and send it in, for much useful information for the purpose of the contest. In their case to hold the band and for I.G.Y., regards propagation conditions.

WESTERN AUSTRALIA

There was no meeting during January, but a Council meeting was held at the home of 6RH, in preparation for the February general meeting. What was decided to do further appeal for I.T.U. Funds. The time is drawing near, fellows; what about it? Some circulars will probably be sent out during the next few weeks. If you receive one, but have already donated, don't be offended; with many donations going direct, it was difficult to keep our record up to the minute.

The past month or so has seen many holidaying Ham's. Some, like 6AQ, get away from home and go all over the place. Some, like "dragged away by the right ear spell," like your scribe (marvellous what excuses can be used to get away from the shack for a day). Some are a majority manage to mix the two and take a 123 or something similar. Heard 6WD/P from Hopetoun. Believe the boys came at night, recorded down there Francis? Or did they grow after death and consumption? 6CL sent quite a long time portable at Greenough River. Believe the copper postcard detector was used there also, 6GU took time off to do some fishing up Greenough way also, before getting back to work. Some of the boys have been heard one story which I did not get the full dose on about 6JH and friend trapping the local doctor by stretching an antenna across the road.

Paid Alan SMA a visit at his new QTH the other day. Alan has settled in nicely now and is enjoying the open space. He has been put on in the near future and is working on ideas for obtaining a.c. from d.c. sources. There is a 6CZ (inverter type of supply) and 6BO (d.c. motor driving doctored a.c. motor).

6BO is still the busy builder, having now finished the garage and is working next on the list is badly needed shack. Unfortunately, work is going to intervene.

The garage being done by 6JH is now on a.s.b. and 6CJ will shortly follow it. Bernie has already started building his ex-

ciler, and from what we know of what he builds, he will make a very good job of it.

The slow more sessions are under way again, but unfortunately have suffered interruption through absence of operators. It is hoped that a regular session may be maintained now that the holidays are over.

Home hunters and builders, 6TR, 6KX and 6TDW, have operation well under way now. Don 6RK has been operating mobile from his car. Incidentally, congratulations are due to Don for the big haul of 1000 calls; congratulations go to Pot also of course.

That's about the lot this month, so will say cheers and Best wishes till April.

TASMANIA

All will agree that the 36 or so miles to George Town to enable the January meeting to be held at the home of George TGC was well worth it as it was a very good meeting. We all had a good view of the efforts of George and also a practical demonstration of the use of a microphone, and a very nice one, at the mike. (A very nice one, too.)

The George Town Radio Club is beginning to get the hang of the use of the microphone. TGC and Bill, and although quite a lot of surplus "junk" was donated, I'm sure that if anyone has any old bits and pieces that are in the line of the above club is a very worthy cause. Donations will be welcomed.

The meeting closed with quite a few things in the meeting pot and after an informal supper, we retraced the above 38 miles, which was also quite pleasant.

As stated last month, I managed to get over to Burnie and got as far as Sid TSP, who was coaxing a signal from a borrowed v.t. set for the benefit of visitors. Sid is using an 1155 set which seems to perform somewhat better than the one I have, probably due to the correct power supply being used. I haven't forgotten about the circuit of Sid and an AM unit on the tail of a No. 18. The photostat unit has been busy so the 150 sheets have been held up a bit. Altogether we had an enjoyable evening and Sid and I were thanking the other chap and seeing his rig, etc., helps to further the spirit of Amateur Radio.

Len TBQ spent the other night giving me an in-depth demonstration of the use of a few kc. too many from a xtal. Nevertheless, it was a very interesting evening and although I had no demonstration of the subject, there is no doubt that seeing a thing done is worth words of reading about it. I was grateful for the opportunity to use it.

Unhappily, during the bit of waiting for 144 mc. lately, but the band has not been too bright at all. Heard you on Friday night, Col, the first for over a week. I noticed in the circular that the time of commencement of our meeting was not known by the Hon. Secretary, Ken 7KA. For any others that do not know and who would like to come along (all visitors welcome), the Northern Zone meets on the second Friday of each month at 8 p.m. There is no fixed meeting time, but we meet on the second Friday at the usual place and any monthly meeting can be found by contacting the Secretary, Max 7CA, at 1915 which do it for quite a while chaps. Cheers for now.

NORTH WESTERN ZONE

Here we are once more; another month of progress (if hope) or otherwise gone by. The only combined activity to report on this month was our group meeting held on Feb. 3 at the usual place. Twenty members and visitors turned up and yet another good evening got under way. General business was disposed of, interpreted with the usual thoroughness and aspects of business handled. Things are moving towards the Burnie Fire Brigade becoming Radio Controlled and I. T. T. and the group will keep the now-moving ball, rolling. Visitors, and I sincerely hope prospective members, were welcomed in and Wicks and Frank Young, I believe, Frank is qualified and has only to apply for licence and call sign, and Ted sounds very keen on the tx hunts and D.F. Yousens is a very keen operator. There is more than a passing interest in Ham activities. It was decided to hold another Tx Hunt on Feb. 24 with two "wild" and two "harmonic oscillator". Report on this outing next month.

A huge and delightful supper was once again served up by the Ladies. It was very much appreciated, but I can see one will have to go without tea in future in order to do justice to the quantity of food. It was a very encouraging more members (that wouldn't work either, would it?).

A small quantity of the usual "junk" was successfully disposed of for all concerned and Athol TJK gave away some valves—replacement ones that Noah carried on the Ark. Realising that the 700 and 750 and 750 and 750 building tx's and cupboards, Lee TKC has his new rig on the air; I believe he got that non-atomic, atomic, atomic, but we reported he did. His discussion was commenced and deferred on the arrangement of a zone net. Mure of this later.

Peter TFF expressed wishes for more of us to join him on 144 mags; he is trying hard to contact a VKA. Some of us may be with you soon, Peter. Ken YAI reported the pressure of work is slackening slightly and hopes to get along to next meeting. Roy THN is back at work again after his recent hospital stay. Alan TGC is back in the UK and Ken TDR tells me he is building his first and second 1/4 inch plating certainly takes some time. I think he intends operating on a mobile, or is going to hide the tx out at sea—perhaps some d.f. gear on "fish" frequencies. Syd TSP is still active in his experiments with the t.v. I believe Harold TME got all the cards coming forward from the QSL Bureau; he sure loves that c.w.

For the month of Feb. see notes from the Northern Zone in last month's "A.R." Congrats Ray, keep up the good work; I guess we will see you down this way from time to time.

Please don't forget the return night at the usual meeting place on March 3.

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